HEALTH STATUS OF TENNESSEANS

TENNESSEE HEALTH STATUS REPORT 1998

TENNESSEE DEPARTMENT OF HEALTH

AND THE

COMMUNITY HEALTH RESEARCH GROUP
THE UNIVERSITY OF TENNESSEE, KNOXVILLE

JANUARY, 1999

Visit us on the HIT Web Site at server.to/hit

STATE OF TENNESSEE
DEPARTMENT OF HEALTH
CORDELL HULL BLDG.
425 5TH AVENUE NORTH
NASHVILLE TENNESSEE 37247

DON SUNDQUIST
GOVERNOR

FREDIA S. WADLEY, MD, MSHPA
COMMISSIONER

November, 1999

MEMORANDUM

To: Tennessee Health Status Report Users

From: Fredia Wadley, M.D. FSW

Subject: Tennessee Health Status Report, 1999

The Tennessee Department of Health is pleased to provide you with this copy of the **Tennessee Health Status Report, 1999**. This is the third annual report in this series, which documents the health status of Tennesseans in its many aspects. This report may also be viewed on our "Health Information Tennesee" (HIT) web site, which contains a wealth of health related statistics and information about Tennessee.

This report and the Health Information Tennessee web site are the result of a continuing partnership between the Tennessee Department of Health and the Community Health Research Group of the University of Tennessee, Knoxville. Together we have responded to the constantly growing need for health information by building the electronic information infrastructure necessary for comprehensive health planning.

Under the direction of Dr. Sandra Putnam, the Community Health Research Group provides research, including data processing, data analyses, and report writing to produce this **Tennessee Health Status Report, 1999**. Our internet site provides widespread dissemination of a constantly growing data base, and allows customized reports tailored to your needs. We encourage you to visit the site at: **server.to/hit**

We at the Tennessee Department of Health hope that you find this report and the internet site informative and beneficial. Any questions may be directed to Bill Wirsing at (615) 532-7901.

TABLE OF CONTENTS -- TENNESSEE HEALTH STATUS REPORT, 1999

INTRODUCTION

- **The Tennessee Health Status Report, 1999** is the third in a series of **Tennessee Health Status Reports**. These reports are benchmark, objective appraisals of the health status of Tennesseans.

- Three focal points are current health-related characteristics of the population, emerging health issues, and guidelines for improvement.

- Baseline health status information is provided at state, regional, and county levels by age, gender, race, and risk, supplemented by access to tables, reports and case level data for customized analysis and mapping on the Health Information Tennessee (HIT) Web site (*server.to/hit)*.

- Population subgroups at excess risk of health problems and disability are identified and profiled.

- Selected indicators from CDC's Healthy People 2000 goals are analyzed, and progress toward their achievement is monitored.

- Data are presented for health manpower, hospitals, nursing homes and other health facilities, and for services utilization. Health professionals are classified by major professional category. Licensed, regulated health facilities - hospitals and nursing homes - are located and described at the county level. Particular focus is given to mid-level practitioners -- nurse-practitioners, nurse-midwives and physician assistants.

- Goals of Report '99 are to:

  - provide baseline measures for health status and problem identification in Tennessee;
  - present trends over time in key health indicators;
  - further develop needs assessment and planning infrastructure;
  - maximize communication via integrated data-sharing technologies;
  - target potential year-by-year goals; and
  - identify possible outcome measures to monitor goal attainment.

- The Tennessee Department of Health (TDH) is a department of State government headed by a cabinet level appointee reporting directly to the Governor.

- TDH divides the State into 14 statistical regions - 6 metropolitan counties and 8 nonmetropolitan clusters of counties.

- Health departments in each of 95 counties have a county health officer, a local county director, and a board of health. Each county and region has established a

health council composed of community residents to support the Community Diagnosis Initiative begun in 1995.

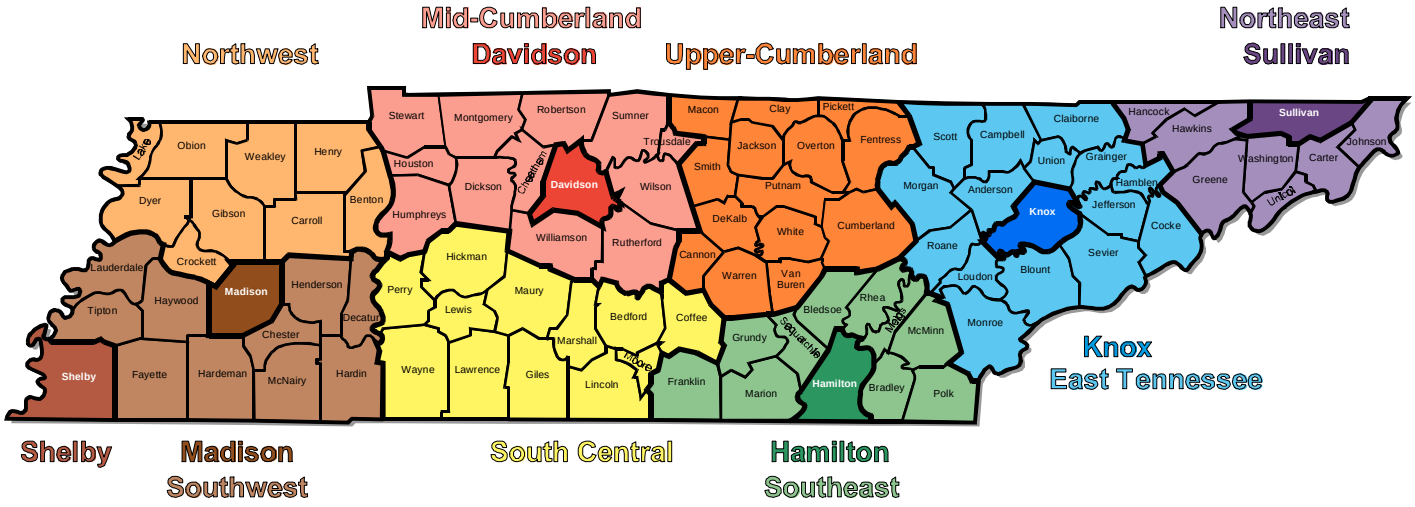
- The vision of the TDH is for “healthy individuals, families, and communities for a healthy Tennessee.”

- The mission of the TDH is to provide the leadership and support necessary to promote, protect, and improve the physical and mental health and well-being of Tennesseans.

- To accomplish the mission of the Department, the following goals have been established:

  - move to a more efficient and effective Department of Health
  - offer every child a safe, healthy start
  - maximize the health status of individuals, families, and communities
  - protect public health safety
  - create supports for good, high paying jobs
  - promote quality service through partnerships with individuals, families, and providers
  - promote public awareness of good health and well-being.

TENNESSEE'S HEALTH DEPARTMENT REGIONS



Metropolitan Regions are six counties: Sullivan, Knox, Hamilton, Davidson, Madison and Shelby.
Nonmetropolitan Regions are eight clusters of counties listed below.

Northeast
Carter
Greene
Hancock
Hawkins
Johnson
Unicoi
Washington

East
Anderson
Blount
Campbell
Claiborne
Cocke
Grainger
Hamblen
Jefferson
Loudon
Monroe
Morgan
Roane
Scott
Sevier
Union

Southeast
Bledsoe
Bradley
Franklin
Grundy
Marion
McMinn
Meigs
Polk
Rhea
Sequatchie

Upper Cumberland
Cannon
Clay
Cumberland
DeKalb
Fentress
Jackson
Macon
Overton
Pickett
Putnam
Smith
Van Buren
Warren
White

Mid-Cumberland
Cheatham
Dickson
Houston
Humphreys
Montgomery
Robertson
Rutherford
Stewart
Sumner
Trousdale
Williamson
Wilson

South Central
Bedford
Coffee
Giles
Hickman
Lawrence
Lewis
Lincoln
Marshall
Maury
Moore
Perry
Wayne

Northwest
Benton
Carroll
Crockett
Dyer
Gibson
Henry
Lake
Obion
Weakley

Southwest
Chester
Decatur
Fayette
Hardeman
Hardin
Haywood
Henderson
Lauderdale
McNairy
Tipton

MORTALITY IN TENNESSEE

General Mortality

- The crude death rate for the Tennessee population in 1997 was 979.5 deaths per 100,000 population. This was 1.3% higher than the 1996 rate (966). Comparing 1997 rates for black and whites by gender, black males registered the highest crude death rate (1,092.1 per 100,000), followed by white males (1,024.9), white females (952.4) and black females (892.6).

- The age-adjusted death rate for the Tennessee population in 1997 was 548.5 deaths per 100,000 population. This was 14% higher than the U.S. rate. Respective age-adjusted death rates for whites and blacks in Tennessee were 508.8 and 818.8. Black males had an age-adjusted death rate of 1103.1, which was 65%, 78% and 189% higher than the respective rates for white males, black females, and white females.

- White females registered lower age-specific death rates in 1997 than black females across the age spectrum. The smallest differential occurred at ages 15-19 years (44.5 per 100,000 for white females and 49.4 per 100,000 for black females). Age-specific death rates for black males generally were substantially higher than corresponding rates for white males. But at ages 85 years and older, there was a reversal, with rates for black males (18,700.9 per 100,000) being lower than the corresponding rate for whites (19,116.9). This could represent a real finding related to selective survival among black males or be merely an artifact of more misreporting of age among the oldest black males compared to their white counterparts.

- Life expectancy at birth represents the average number of years a newborn could be expected to live assuming persistence of prevailing mortality conditions. In 1997 life expectancy at birth for the Tennessee population was 74.8 years, the same as in 1996. This compares with the 1997 figure for the U.S. population of 76.5 years.

- In 1997, life expectancy for females in Tennessee was 78.3 years and 71.1 years for males. Respective figures for white females, black females, white males and black males were 79.2, 73.1, 72.2 and 64.3 years. Corresponding figures for the U.S. were 79.9, 74.7, 74.3 and 67.2 years. Life expectancy at age 25 years was 55.1 years for white females compared with 49.9 years for black females, and 48.8 years and 42.1 years for white and black males, respectively. Corresponding figures for the U.S. were 55.8, 51.4, 50.6 and 44.7 years.

- Among elderly males, there is an observed mortality crossover. In contrast to life expectancy at young ages, that for black males surpassed that for white males at ages 80 and 85 years. In 1997, black males at age 80 had a remaining expected lifetime of 7.0 years compared to 6.9 years for their white counterparts. The

differential was wider at age 85, with an expected 5.4 years of life remaining for black males compared with 5.1 years for white males. Similar race differentials in life expectancy occur among males at the national level. For both Tennessee and the nation, these observed differences may be real or be an artifact of relatively more age misreporting among elderly black males.

Leading Causes of Death

- In 1997, the five leading causes of death in Tennessee in rank order were heart disease, cancer, stroke, chronic obstructive pulmonary disease (COPD), and unintentional injury ("accidents and adverse effects"). This duplicated the rank order for the national population. Rounding out the top 10 causes of death in Tennessee were pneumonia and influenza, diabetes mellitus, suicide, chronic liver disease, and homicide. The death rate for heart disease (308.1 deaths per 100,000 population) exceeded the combined rates for cancer (221.2) and stroke (76.6). If the three injury categories ("accidents," suicide and homicide) were combined, then injury would rank as the fourth leading cause of death (70 per 100,000 population) in Tennessee, just behind stroke, and well ahead of chronic obstructive pulmonary disease (46.1 deaths per 100,000 population).

- In rank order, heart disease, cancer and stroke constituted the leading causes of death in Tennessee in 1997 for whites and blacks of both genders. Diabetes was the seventh leading cause of death overall (24.5 deaths per 100,000 population), but ranked as the fourth leading killer among black females (46.1). The diabetes death rate for black females was almost twice as high as that of black males (26.5). When their respective rates were age-adjusted, however, this differential shrank to 17% (31.2 deaths per 100,000 for black females versus 26.6 for black males).

- In 1997, unintentional injury ("accidents" and adverse effects) was the leading cause of death among Tennesseeans ages one to 39 years. Homicide, which together with suicide comprises intentional injury, ranked as the premier killer of black males ages 15-29 years. It was their second leading cause of death at ages 30-34 behind unintentional injury, but was also the leading killer of black males at ages 35-39.

- Cancer (malignant neoplasms) ranked as the number one cause of death among Tennesseans ages 40-74 years and second to heart disease from age 75 to 84 years. Stroke was second to heart disease at ages 85 years and older.

- Heart disease was the leading killer of white males at ages 40-59, 65-69, and 75 years and older. But cancer occupied the top rank at ages 60-64 and 70-74. Cancer was the leading cause of death among white females ages 40-74, black males ages 65-74, and black females ages 30-39 and 45-64.

- Changes in life expectancy at birth between 1990 and 1997 were minimal for white females, and blacks of both genders. In contrast, white males experienced a gain

of nearly a year, from 71.3 years in 1990 to 72.2 years in 1997. Almost half of that gain could be attributed to a decline in the heart disease death rate, and another 16% to a decline in the cancer death rate. The largest improvements in mortality occurred among white males in the age range 55 to 79 years.

Infant/Neonatal/Postneonatal Mortality

- In 1997, the infant mortality rate for Tennessee was 8.5 infant deaths per 1,000 live births. This matched the 1996 rate, but was 18% higher than the 1997 U.S. rate (7.2). The respective rates for whites and blacks were 6.4 and 16.3 infant deaths per 1,000 live births. Corresponding national rates for whites and blacks were 6.0 and 14.2. Little variation was evident between the rates for black males and females. But the rate for white males exceeded that for white females by 37% (7.4 versus 5.4). From 1996 to 1997, the infant mortality rate declined by 4% for whites, and rose by 6% for blacks.

- Respective 1997 neonatal mortality rates for the Tennessee population, whites and blacks were 5.1, 3.8 and 9.8 neonatal deaths per 1,000 live births. Corresponding national rates were 4.8, 4.0 and 9.4. Whereas the neonatal rate for males (4.2) in Tennessee exceeded that for females (3.4) by 24%, the rate for black females (10.4) exceeded the rate for black males (9.3) by 12%. Tennessee's neonatal mortality rate of 5.1 in 1997 was marginally lower than the 1996 rate (5.6). The rate for whites was 10% below the 1996 rate, but the rate for blacks was 5% higher than that for 1996.

- In 1997, the postneonatal mortality rate for Tennessee marginally surpassed the rate for 1996 (3.4 postneonatal deaths per 1,000 live births versus 3.3). The national rate was 2.5. Between 1996 and 1997, the Tennessee postneonatal mortality rate for whites increased by 4% and that for blacks by 7%. The 1997 rate for blacks (6.5) was two-and-a-half times higher than the corresponding rate for whites (2.6). Rates for males exceeded those for females by 60% in the case of whites and by 24% in the case of blacks.

- As in 1996, congenital anomalies (189.4 deaths per 100,000 live births), sudden infant death syndrome (SIDS) (138.3), and disorders relating to short gestation and unspecified low birth weight (112.8) ranked as the three leading causes of infant mortality in 1997. These rates for black infants were, respectively, 24%, 134% and 313% higher than those for white infants.

Mortality Burden

- To provide assistance in planning and prioritizing health care initiatives, it is useful to broadly categorize Tennessee's mortality burden under three mutually exclusive cause of death groupings. Group I comprises communicable diseases, such as HIV

and tuberculosis; maternal causes; conditions arising in the perinatal period; and nutritional deficiencies. Group II comprises noncommunicable diseases like heart disease, cancer and stroke. Group III comprises injuries - both intentional and unintentional. These groupings were derived from The Global Burden of Disease Study,[1] a cooperative venture of the World Health Organization, World Bank, and Harvard University. Groups I-III embrace all deaths except the small residual category of symptoms, signs, and ill-defined conditions.

- Group I causes of death predominate at low levels of social economic development, as in developing countries and in poverty sectors in developed countries. In 1997, the highest rate of deaths in this communicable disease category was found for black males (111.4 deaths per 100,000 population). This rate was 40% higher than the rate for black females, 72% higher than the rate for white females, and more than twice that for white males. The age-adjusted rate for Group I causes was 107.7 for black males, which exceeded the age-adjusted rates for black females, white males and white females by 86%, 215% and 360%, respectively. But it represented a 6% decline from the 1994-1996 rate.

- Whites manifested the highest rates of mortality attributable to Group II conditions, the noncommunicable diseases. The rate for white males was 860.2 deaths per 100,000. This exceeded the rate for white females by 3%, and those for black males and black females by 6% and 13%, respectively. But with age-adjustment, black males registered by far the highest rate (822.0 deaths per 100,000). Their rate exceeded the corresponding rates for white males, black females, and white females by 53%, 59% and 156%. However, this rate approximated that for black males for the period 1994-1996 (821).

- Black males registered the highest rate for Group III causes, injury (148 deaths per 100,000 population). Their rate was 52%, 255% and 285% higher than the respective rates for white males, white females and black females. Age-adjusting the injury rates widened the margin between black males and the three other gender-race groups. The rate for black males (157.0 deaths per 100,000) exceeded the respective rates for white males, black females and white females by 75%, 358% and 395%. It exceeded the 1994-1996 rate by 5%. With age-adjustment, the injury death rate for white females (31.7) fell slightly below that for black females (34.3).

- Disregarding gender and race, Group II conditions, that is, noncommunicable disease, accounted for 85% of all deaths in Tennessee in 1997. Groups I and III, communicable disease and injury, each accounted for approximately 7% of total deaths. The residual 1% pertained to those deaths for which a specific diagnosis

[1]C.J.L. Murray and A.D. Lopez, eds. The Global Burden of Disease, vol. I. (Cambridge, MA: Harvard University Press, 1996).

of the underlying cause could not be officially determined; deaths classified on the death certificate under symptoms, signs and ill-defined conditions.

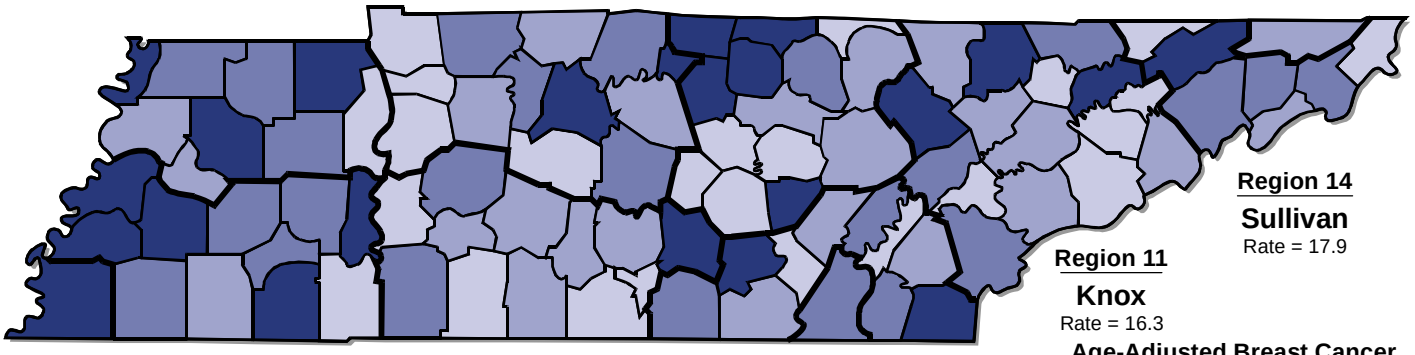
- Noncommunicable disease predominated as a cause of death across gender and race. But injury accounted for a higher proportion of the mortality burden among males (10% versus 4%) and for blacks than whites (9% versus 7%). Communicable disease was proportionally more important as a cause of death among blacks than whites (10% versus 6%), and also among white females than white males (7% versus 5%) and among black males than black females (10% versus 9%).

- Whereas death rates for Groups I through II conditions peaked at the oldest ages, there was a perceptible secondary peak for injury (Group III) at ages 15-49 years. This secondary peaking was most pronounced for males at ages 20-29 and females at ages 35-49.

- Examination of age-adjusted death rates for the three groups of conditions revealed no clear upward or downward trends for the period 1990-1997. With two exceptions, this generally held for blacks and whites, irrespective of their gender. Between 1994 and 1997, white males manifested an almost 26% decline in their age-adjusted communicable disease death rate; from 45.3 deaths per 100,000 population to 34.2 per 100,000. Over the years from 1991 to 1997 the corresponding rate increased by 14% for black males; from 78.9 deaths to 107.7 deaths per 100,000 population.

Source: Tennessee Department of Health, Office of Health Statistics and Research, and Health Information Tennessee (HIT) Web site (server.to/hit).

ANNUAL AVERAGE AGE-ADJUSTED BREAST CANCER DEATH RATES, PER 100,000 FEMALES, BY COUNTY AND REGION, TENNESSEE, 1995-1997



Region 7 Northwest Rate = 22.0
Region 5 Mid-Cumberland Rate = 18.5
Region 10 Davidson Rate = 24.3
Region 4 Upper-Cumberland Rate = 18.2
Region 2 East Tennessee Rate = 17.3
Region 1 Northeast Rate = 20.9
Region 14 Sullivan Rate = 17.9
Region 11 Knox Rate = 16.3
Region 9 Shelby Rate = 23.0
Region 13 Madison Rate = 21.3
Region 8 Southwest Rate = 23.3
Region 6 South Central Rate = 19.4
Region 12 Hamilton Rate = 22.3
Region 3 Southeast Rate = 20.2

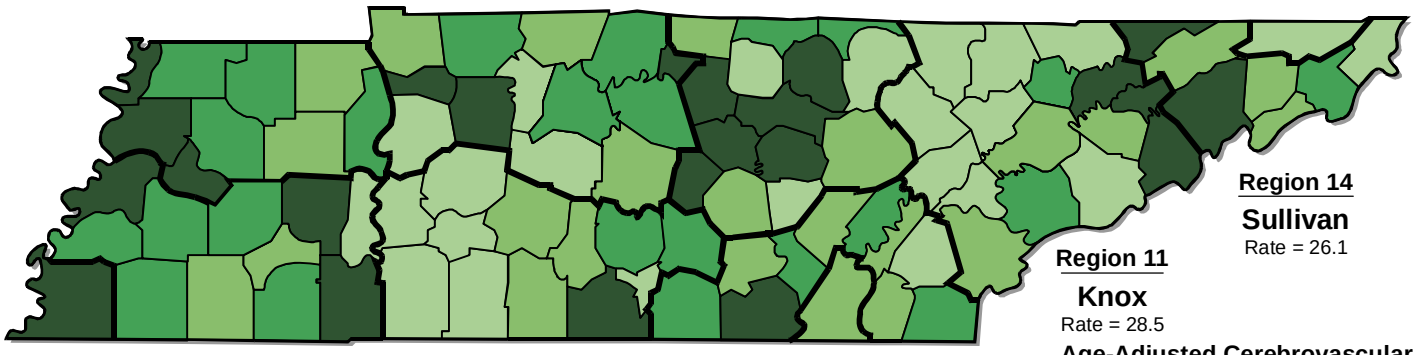
Age-Adjusted Breast Cancer Death Rates

- 3.2 - 15.4
- 15.5 - 19.3
- 19.4 - 22.9
- 23 - 68.3

Statewide Rate = 20.2

Source: Tennessee Department of Health and HIT (server.to/hit)

ANNUAL AVERAGE AGE-ADJUSTED CEREBROVASCULAR DISEASE DEATH RATES PER 100,000, BY COUNTY AND REGION, TENNESSEE, 1995-1997



Region 7 Northwest Rate = 36.2
Region 5 Mid-Cumberland Rate = 32.5
Region 10 Davidson Rate = 34.2
Region 4 Upper-Cumberland Rate = 34.8
Region 2 East Tennessee Rate = 31.3
Region 1 Northeast Rate = 32.2
Region 14 Sullivan Rate = 26.1
Region 11 Knox Rate = 28.5
Region 9 Shelby Rate = 45.2
Region 13 Madison Rate = 38.3
Region 8 Southwest Rate = 40.3
Region 6 South Central Rate = 29.6
Region 12 Hamilton Rate = 31.0
Region 3 Southeast Rate = 32.3

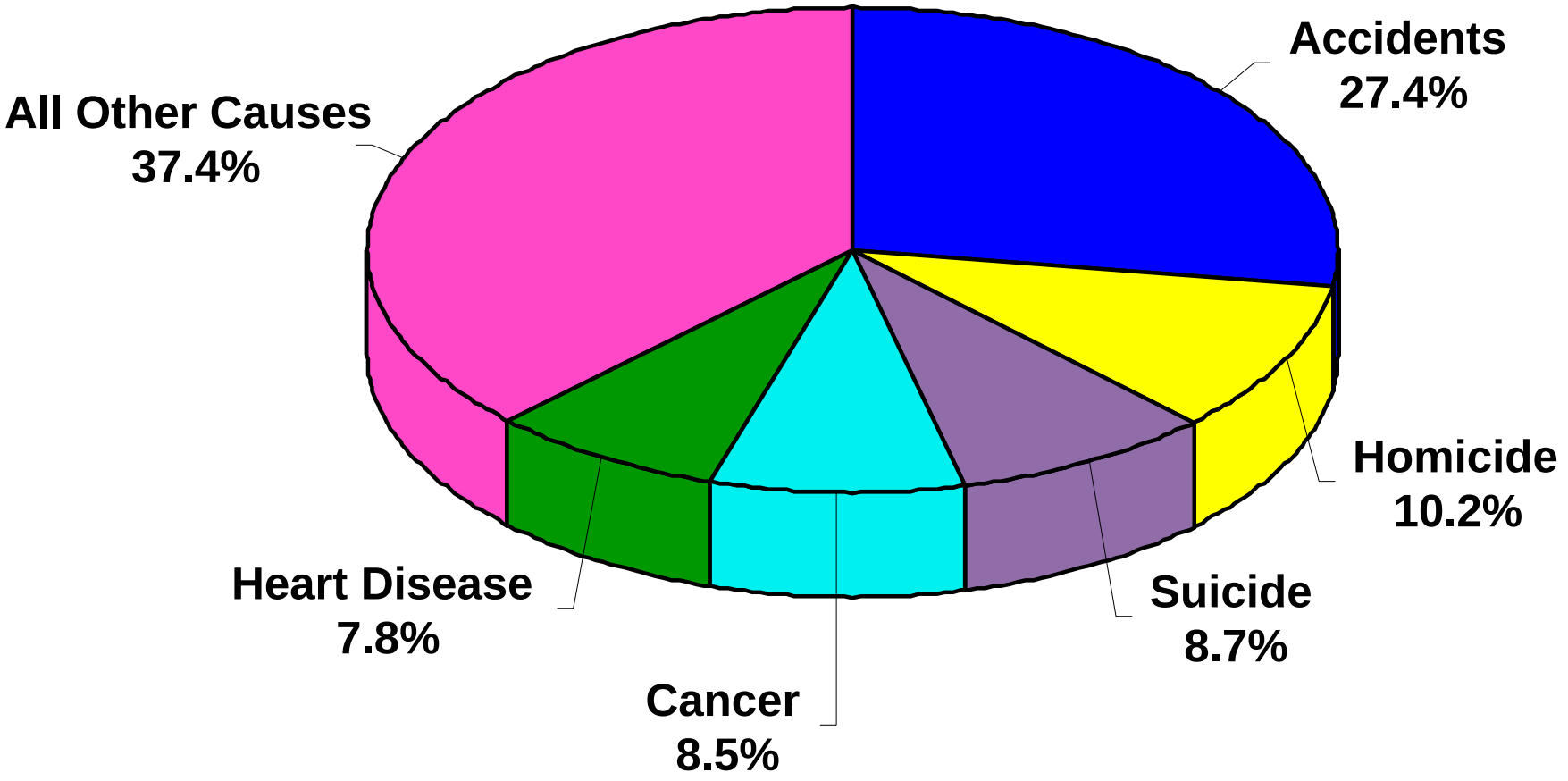
Age-Adjusted Cerebrovascular Disease Death Rates

- 18.4 - 26.1
- 26.2 - 33.6
- 33.7 - 38.6
- 38.7 - 59.8

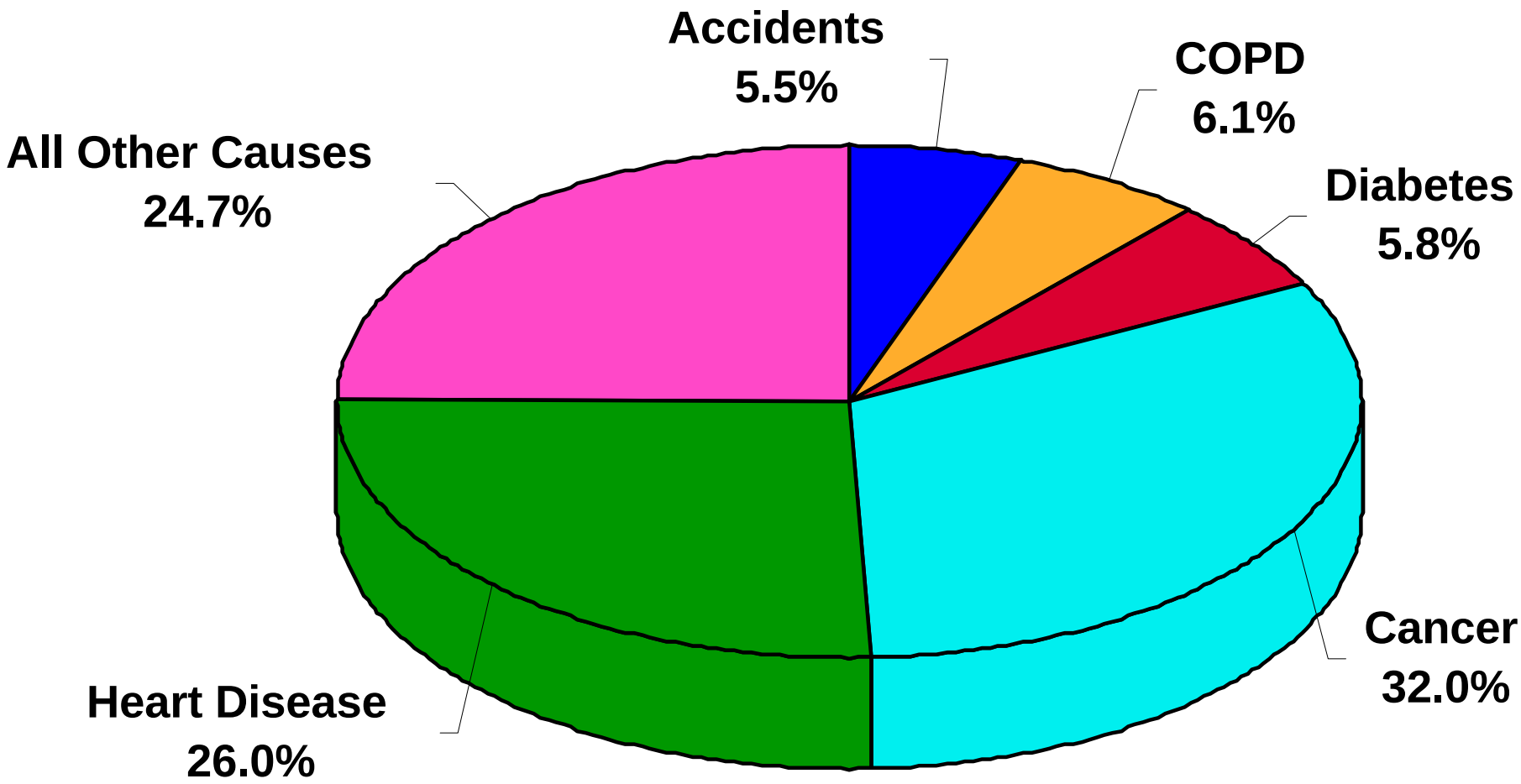
Statewide Rate = 34.3

Source: Tennessee Department of Health and HIT (server.to/hit)

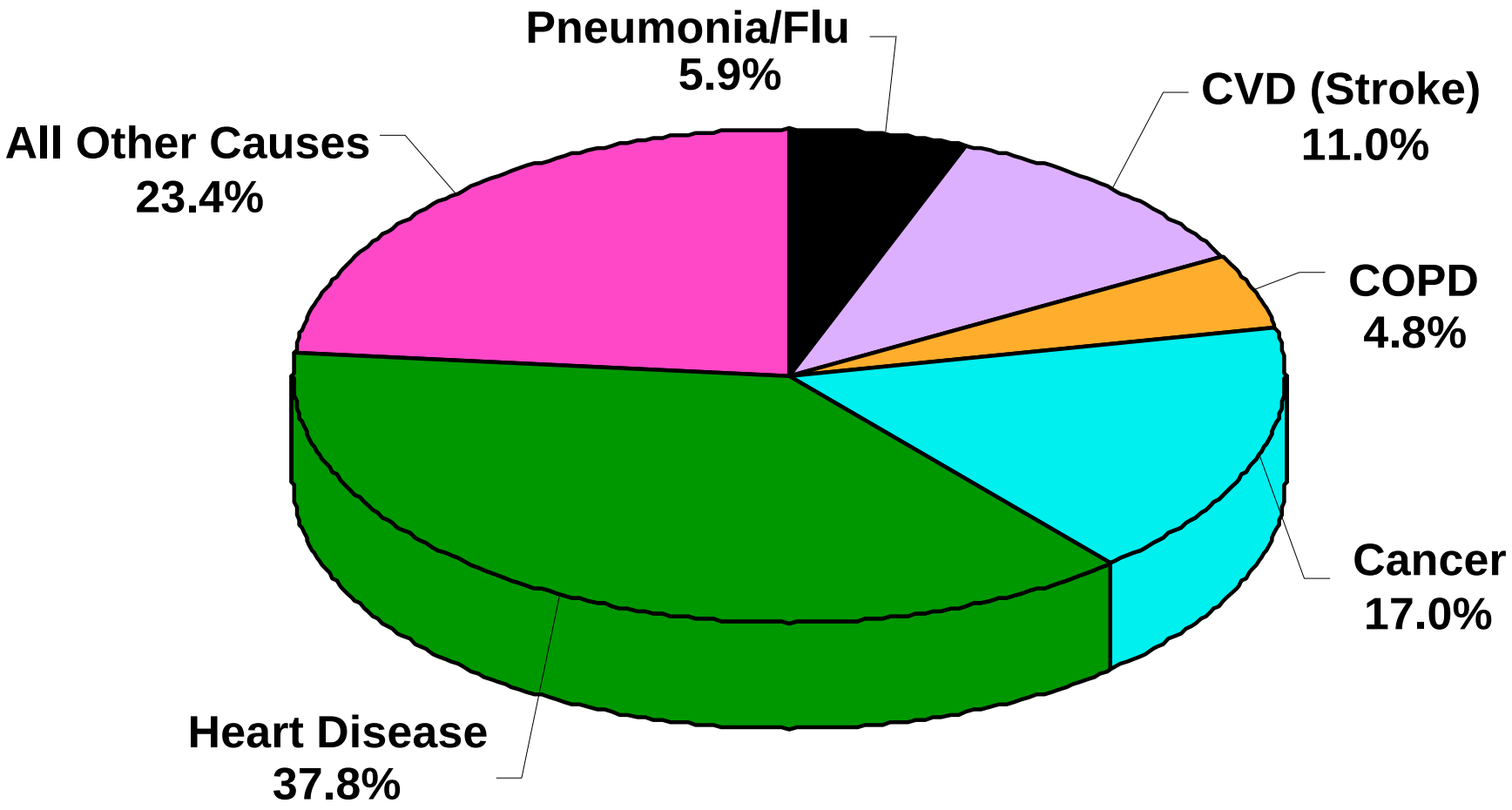
Leading Causes of Death Among Persons Ages 0-39 Years, Tennessee, 1997



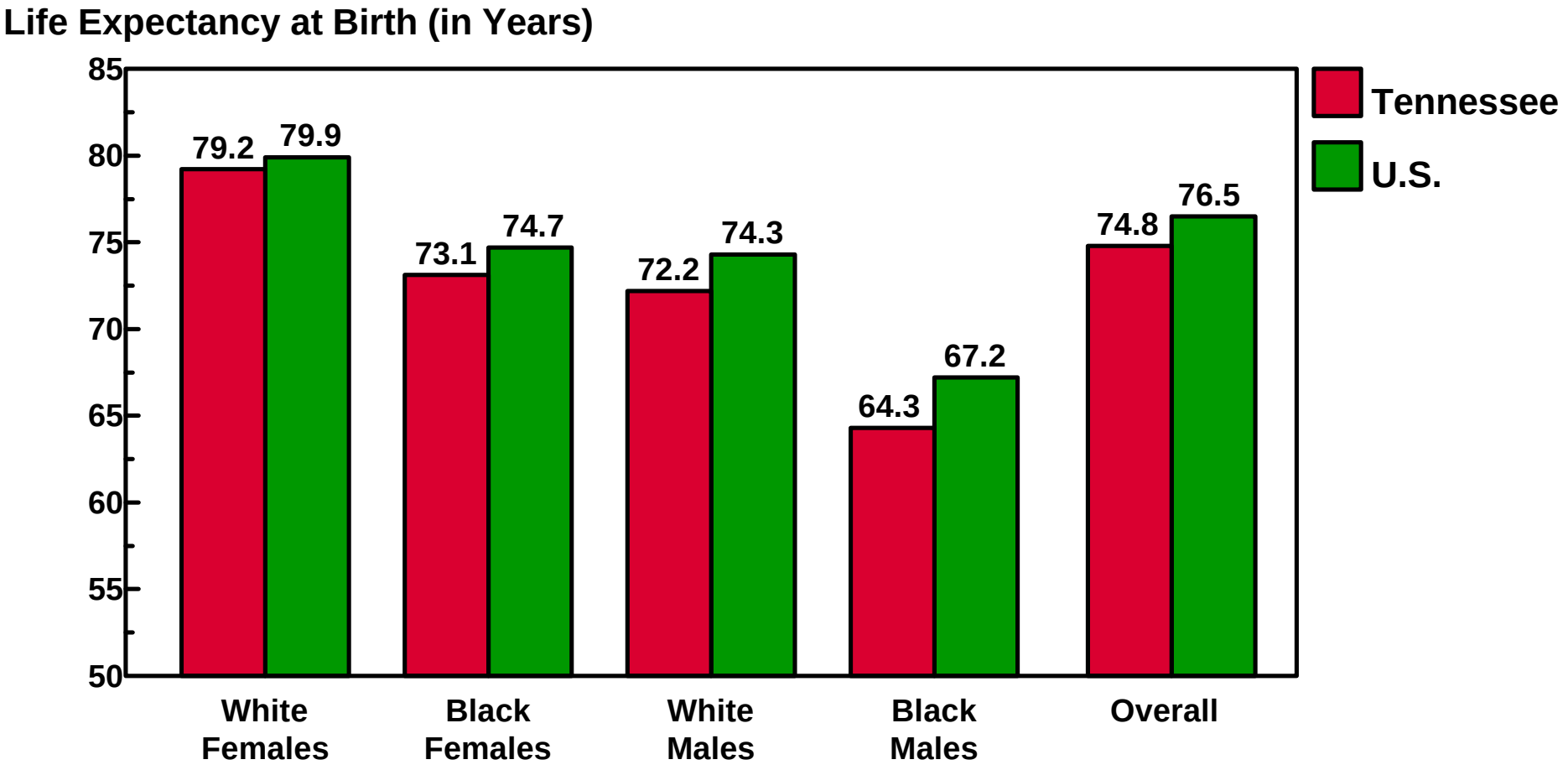
Leading Causes of Death Among Persons Ages 40-74 Years, Tennessee, 1997



Leading Causes of Death Among Persons Ages 75+ Years, Tennessee, 1997

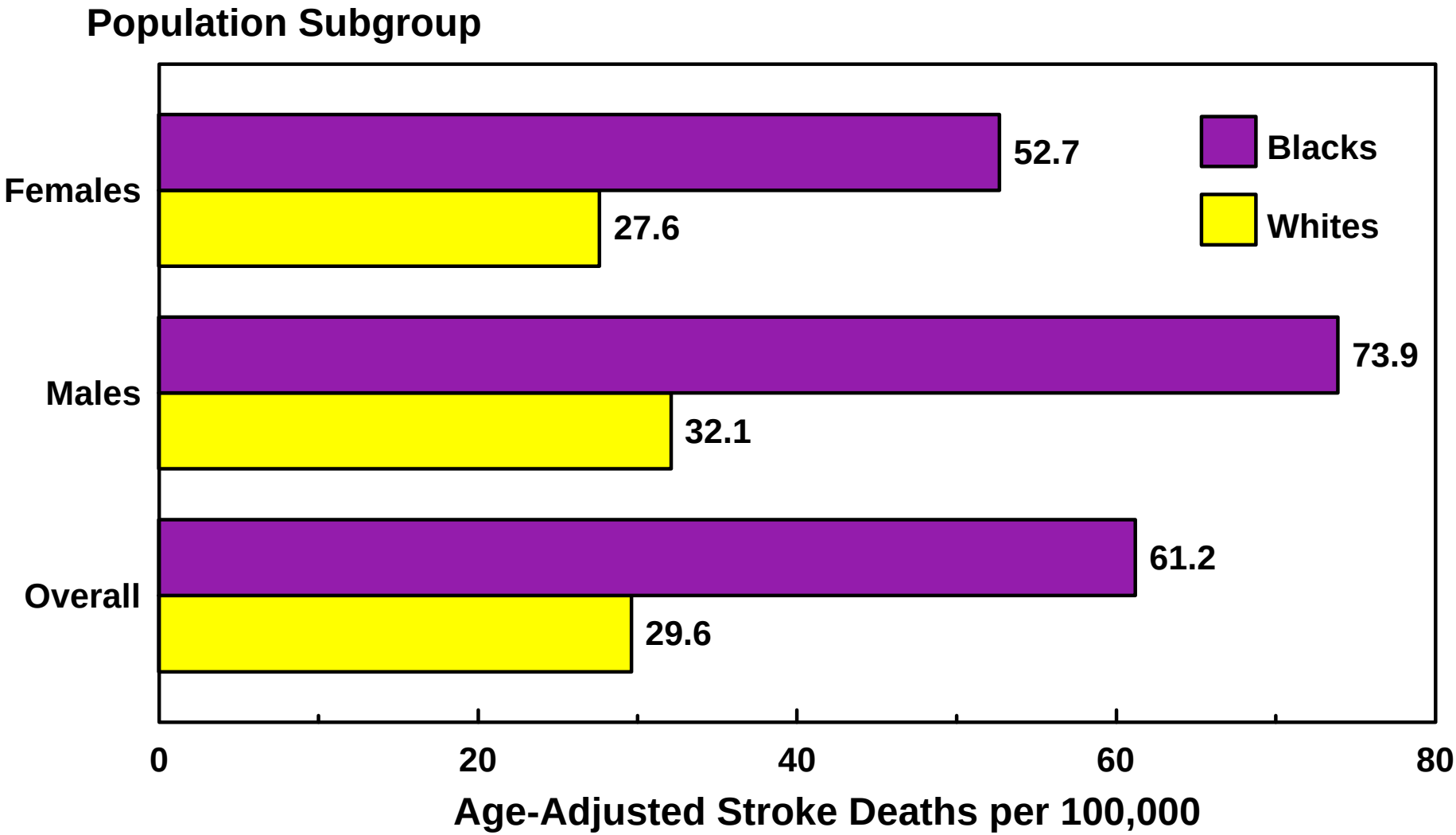


Life Expectancy at Birth by Race and Gender, Tennessee and the U.S., 1997



Source: Health Information Tennessee (server.to/hit)

Age-Adjusted CVD (Stroke) Death Rates (per 100,000) by Race and Gender, Tennessee, 1997



Source: Health Information Tennessee (server.to/hit)

COMPARISON OF MORTALITY IN KENTUCKY AND TENNESSEE, 1996-1997

- Comparing all-cause mortality for both females and males in 1997, the two border states of Tennessee and Kentucky exhibit very similar rates.

- In specific cause categories, some differences are noted.

  - Higher cerebrovascular disease death rates and pneumonia/influenza death rates are observed among Tennessee females and males, compared to their Kentucky counter-parts.

  - Higher cancer death rates are observed among Kentucky males and females, compared to their Tennessee counterparts.

- The respective percentages of deaths attributable to the five leading causes in 1997 are fairly uniform across the two states.

- Age-adjusted mortality rates for 1996 (adjusted to the 1940 standard population) are higher among Kentucky females for lung cancer, heart disease, and COPD, with some excess stroke mortality again noted for Tennessee females.

- Both age-adjusted suicide and homicide rates are higher among Tennessee females, while unintentional injury mortality is higher among Kentucky females in 1996.

- All-cancer death rates are higher for both white and black females in Kentucky, compared to white and black females in Tennessee in 1996.

- White females in Tennessee had lower overall cancer mortality rates and lower lung cancer rates, but about the same death rates from breast cancer as their Kentucky counterparts. White females in Tennessee also had lower heart disease and COPD mortality and lower unintentional injury death rates compared to rates among their Kentucky peers.

- Among black females, the most striking difference in age-adjusted mortality rates is the relatively low rate of death from all cancers, especially lung cancer and chronic obstructive pulmonary disease in the Tennessee's population compared to the Kentucky population. On the other hand, Tennessee black females showed excess age-adjusted death rates from genital cancers and, to a lesser extent, breast cancer, heart disease, and stroke (CVD). Other causes of death are similar among black females from the two neighboring states, including rates of diabetes, and unintentional and intentional injuries.

Source: Health Information Tennessee (HIT) Web site at **server.to/hit** and "A Profile of Women's Health Status in Kentucky", Kentucky Office of Women's Health, Frankfort, Kentucky, circa 1998/1999.

Table 1. Comparison of Leading Causes of Death in Rates per 100,000 by Gender, Kentucky and Tennessee, 1997

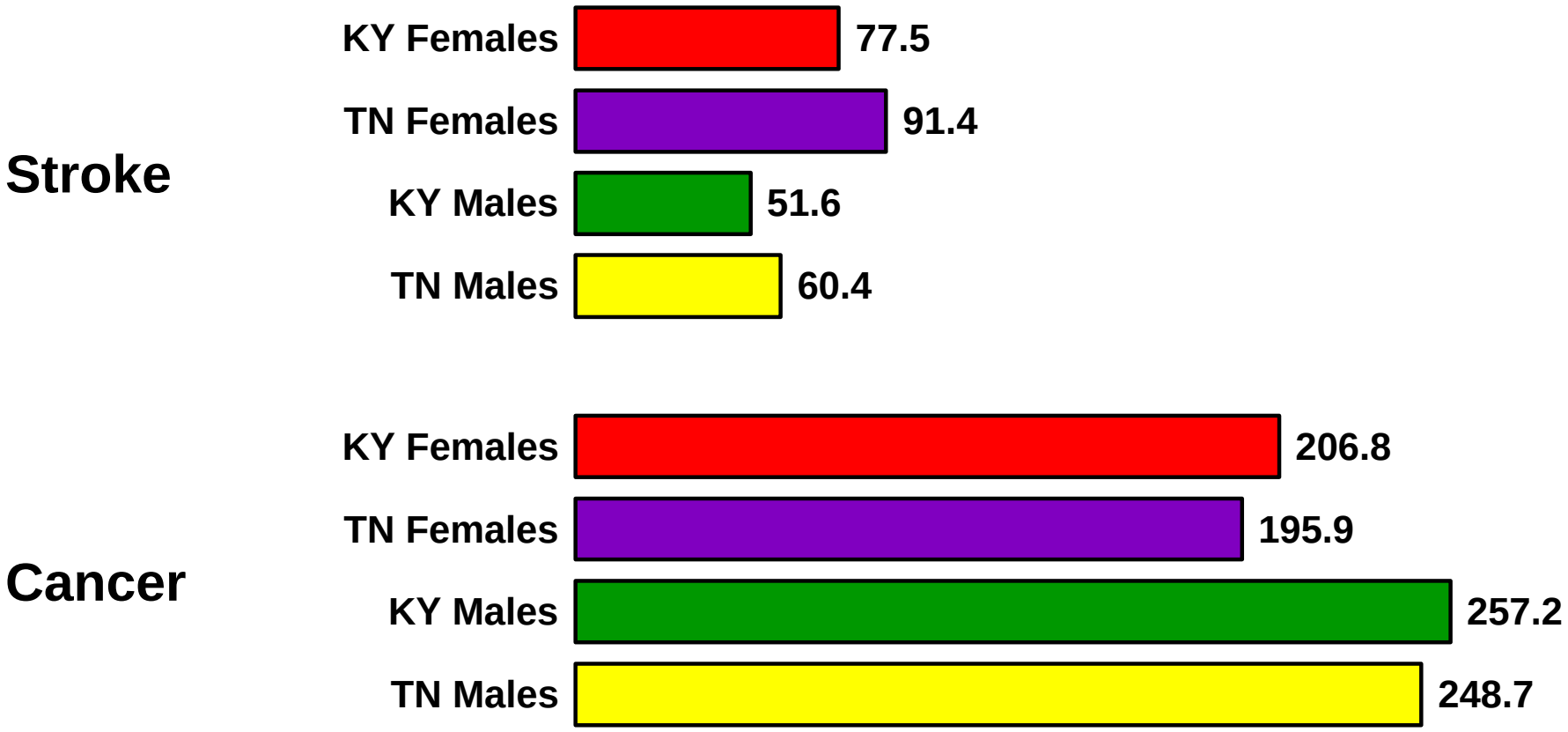
Selected Causes	Females		Selected Causes	Males	
	Kentucky	Tennessee		Kentucky	Tennessee
All Causes	935.8	935.3	All Causes	101.2	102.7
Heart Disease	311.7	297.6	Heart Disease	322.5	319.5
Cancer	206.8	195.9	Cancer	257.2	248.7
CVD (Stroke)	77.5	**91.4**	Unintentional Injuries	60.7	62.0
COPD	46.5	39.9	COPD	55.8	52.7
Pneumonia/Influenza	37.7	42.1	CVD (Stroke)	51.6	**60.4**
Unintentional Injuries	27.8	30.6	Pneumonia/Influenza	31.5	33.6
Diabetes	27.0	27.6	Diabetes	22.8	21.0

Table 2. Comparison of Leading Causes of Death in Percentages by Selected Cause, Kentucky and Tennessee, 1997

Selected Causes	Females		Selected Causes	Males	
	Kentucky	Tennessee		Kentucky	Tennessee
Heart Disease	33.3	30.6	Heart Disease	31.9	31.1
Cancer	22.1	21.9	Cancer	25.4	24.2
CVD (Stroke)	8.3	8.6	Unintentional Injuries	6.0	6.0
COPD	5.0	4.4	COPD	5.5	5.1
Pneumonia/Influenza	4.0	4.9	CVD (Stroke)	5.1	5.9

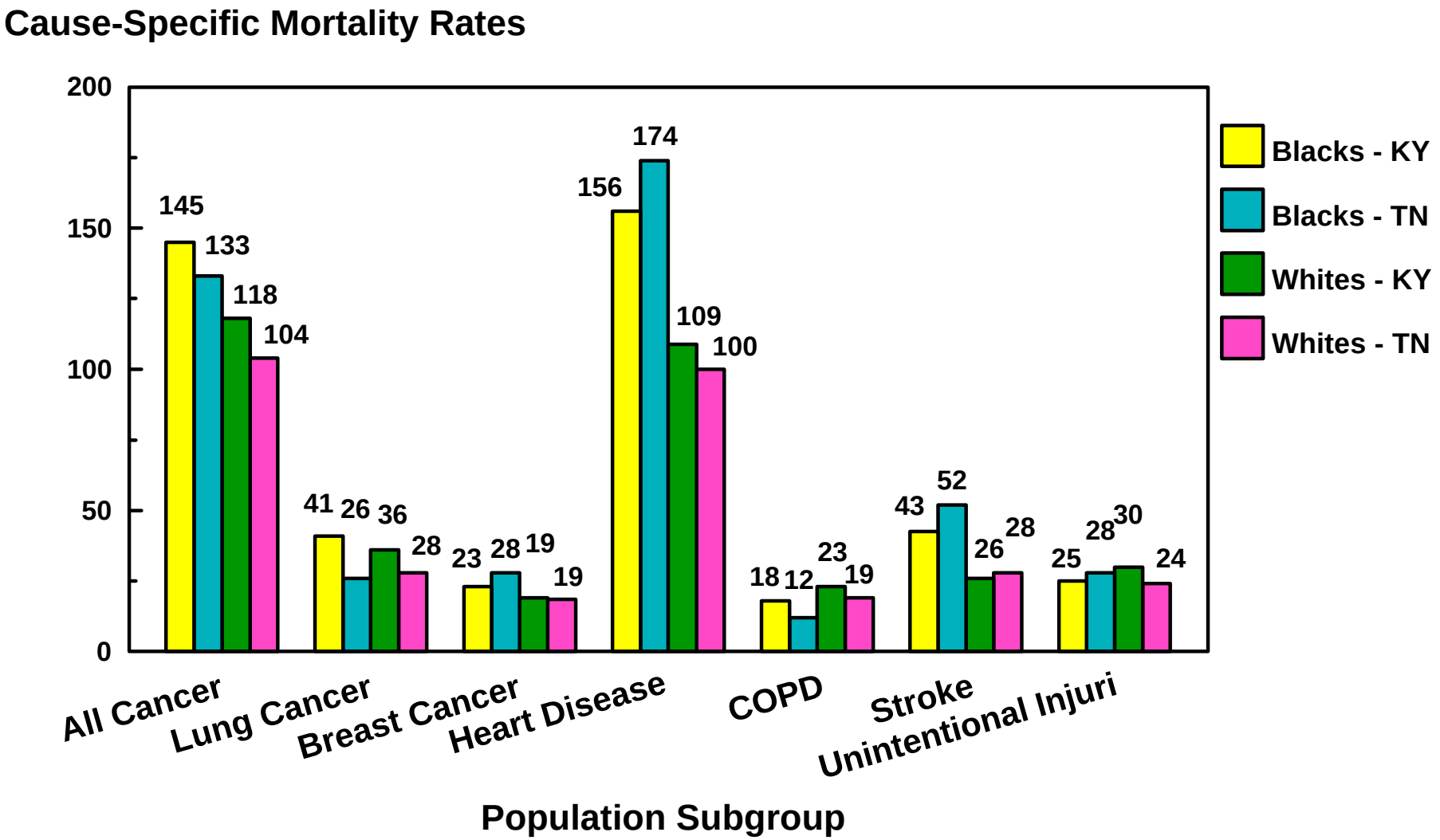
NOTE: Rates in bold suggest excess risk.

Comparison of Stroke and Cancer Mortality Rates by Gender among Tennessee and Kentucky Residents, 1997



Source: Health Information Tennessee Web site (server.to/hit)

Comparison of Age-Adjusted Mortality Rates among Females in Kentucky and Tennessee, by Race, 1997



Source: Health Information Tennessee Web site (server.to/hit)

TENNESSEE'S RANKINGS ON SELECTED HEALTH INDICATORS COMPARED TO OTHER STATES AND THE U.S.

- Tennessee consistently ranks among the states with highest mortality, years of potential life lost, and related risk factors such as smoking, yet Tennessee ranks favorably in relation to other states in health care resources[2].

Mortality Measures

- In 1996, Tennessee ranked 10th among states in suicide and homicide and 7th in years of life lost due to premature death from the following: all causes of death, cancer, heart disease, and unintentional injuries.

- In 1997, Tennessee's age-adjusted death rates ranked 5th in magnitude after Michigan, Louisiana, Arkansas and Alabama. The estimate based on this source is 563, compared to 478 per 100,000 for the U.S.

- Tennessee's mortality ranking is changing over time in a negative direction. In 1980, Tennessee ranked 22nd in crude death rates (at 8.9 per 1,000 population compared to 8.8 for the U.S.). Tennessee ranked 12th in 1990, with a crude death rate 9.5 per 1,000 compared to 8.6 for the U.S. In 1997, Tennessee's crude death rate was 9.8 per 1,000, compared to 9.7 for the U.S.

Cancer Death Rates

- Based on estimated cancer death rates for 1999, Tennessee ranked 14th among states in all forms of cancer, 8th in lung cancer, 9th in female breast cancer, 14th in leukemia, 20th in ovarian cancer, 23rd in colon and rectal cancer, 27th in non-Hodgkin's lymphoma, 33rd in prostate and esophageal cancer, 34th in stomach cancer, and 38th in pancreatic cancer death rates.

Births and Infant Deaths

- Tennessee ranked 6th in births of infants of low weight as a percent of all births in 1997, reported in this source as 8.8%, compared to 7.5% in the U.S.

  - Tennessee's low birth weight ranking is 5th for whites, at 7.4% compared to 6.5% in the U.S., and 7th for blacks, at 13.7% compared to 13.% for the U.S.

  - Tennessee ranked 8th nationally in the percent of births to teenage mothers, at 16.3% compared to 12.8% for the U.S. in 1997.

[2]These rankings are based on data covering a variety of years, and their quality is not known.

- Tennessee's infant mortality rates ranked 12th among all States in 1980, 7th in 1997 and 8th in 1998. Rates are estimated from this source at 13.5, 8.4 and 8.5 in 1980, 1997 and 1998, respectively. U.S. rates are estimated at 12.6, 7.0 and 7.0 for each of these respective years.

- Finally, in 1990 Tennessee ranked 21st in infant mortality rates among whites and 11th in rates among blacks, while in 1996, Tennessee ranked 15th and 14th in infant mortality rates among whites and blacks, respectively.

Communicable Diseases

- In 1998, Tennessee ranked:

  - 10th in the meningococcal infection rate and
  - 5th in the tuberculosis rate, estimated at 8.4 per 100,000 population in Tennessee, compared to 5.5 in the U.S.

- In 1997, Tennessee ranked:

  - 10th in sexually transmitted disease rates overall, including
  - 10th in chlamydia rates
  - 8th in gonorrhea rates and
  - 3rd in syphilis rates, after Maryland and Washington, D.C.

Health Status

- In 1997, self-reported physical and mental health status were assessed as lower in Tennessee, with the State ranking 9th in the percentage of adults whose health is reported as not good and 4th in the average number of days mental health was reported as not good.

- However, Tennessee ranked 24th in the percentage of the population lacking access to mental health care in 1998, a figure estimated at 13.9% compared to 11.7% for the U.S.

- The percentage of Tennesseans lacking access to dental care in 1998 was estimated at 17.2% in Tennessee compared to 5.1% nationally. Tennessee ranked 2nd in lack of access to dental care.

Smoking

- Tennessee also ranked 7th in average annual death rates due to smoking from 1990-1994.

- Tennessee ranked 6th in the percentage of adults who smoke cigarettes, at 27% compared to 23% of U.S. adults. Tennessee ranked 4th in the percentage of women who smoke cigarettes and 14th in the percentage of male smokers.

- In Medicaid costs related to smoking in 1993, Tennessee ranked 12th, at 2.3% of U.S. costs for that year, and the State ranked 10th in estimated funds from the tobacco settlements through year 2025 ($4.8 billion) or 2.4% of U.S. funds.

- Tennessee ranked 16th in the percentage of births to females who smoked during pregnancy in 1996, estimated at 17.6% for Tennessee and 13.6% for the U.S.

Alcohol and Drug Abuse Indicators

- Alcohol and drug-related indicators placed Tennessee in the middle of the State rankings in 1996. Thus, in 1996, Tennessee ranked :

  - 15th in numbers of alcohol-induced deaths
  - 20th in death rates from alcohol-induced deaths
  - 19th in age-adjusted death rates from alcohol-induced deaths
  - 16th in drug-induced deaths
  - 20th in death rates from drug-induced deaths
  - 22nd in age-adjusted death rates from drug-induced deaths, and
  - 42nd in per capita apparent alcohol consumption among adults (age 21+), 31st in beer consumption, 39th in wine consumption and 41st in distilled spirits consumption.

Expenditures for Health Care

- Indicators of expenditures for health care in Tennessee were relatively highly ranked compared to other States; e.g., in 1993, for which most recent data were available, Tennessee ranked 7th in health care expenditures as a percent of gross state product, at 14% compared to 12% for the U.S.

- Tennessee's ranking was 9th in per capital personal health care expenditures but 6th in per capita expenditures for hospital care and 3rd for per capita expenditures for prescription drugs in 1993.

- Taking first ranking among all States, Tennessee had the highest percentage of total personal health care expenditures spent on home health care in 1993, at 5.5% compared to 3% nationally. The State ranked second after New York in per capita expenditures for home health care at $177 in 1993, compared to $89 in the U.S. in that year.

HMO Enrollment

- HMO enrollment in Tennessee was ranked 25th as a percentage of the population in 1998 (24% compared to 29% in the U.S.), although Tennessee ranked 3rd in percent change in HMO enrollees. From 1997 to 1998, HMO enrollment increased by 55% in Tennessee, compared to 15% in the U.S.

Lack of Health Insurance

- Tennessee ranked 26th in the percent of the population not covered by health insurance in 1997, at 13.6%, compared to 16.1% for the U.S. as a whole.

Medicare

- Tennessee ranked 10th in Medicare payments per enrollee in 1998 at $5,935, compared to $5,465 for the U.S. Tennessee ranked 20th in the percent of the population enrolled in Medicare in 1998, at 14.7%, compared to 13.9% for the U.S.

The Impact of Tennessee's Medicaid/TennCare Program

- Tennessee ranked first in the percent of the population receiving Medicaid in 1997, at more than double the figure for the U.S. (26.4%, compared to 12.5% of U.S. residents).

- In 1997, 1,415,612 Medicaid recipients were reported to the Health Care Financing Administration (HCFA) for Tennessee, placing it 5th in States' ranking of numbers of such recipients. Tennessee's recipients represent 4.2% of total U.S. Medicaid recipients.

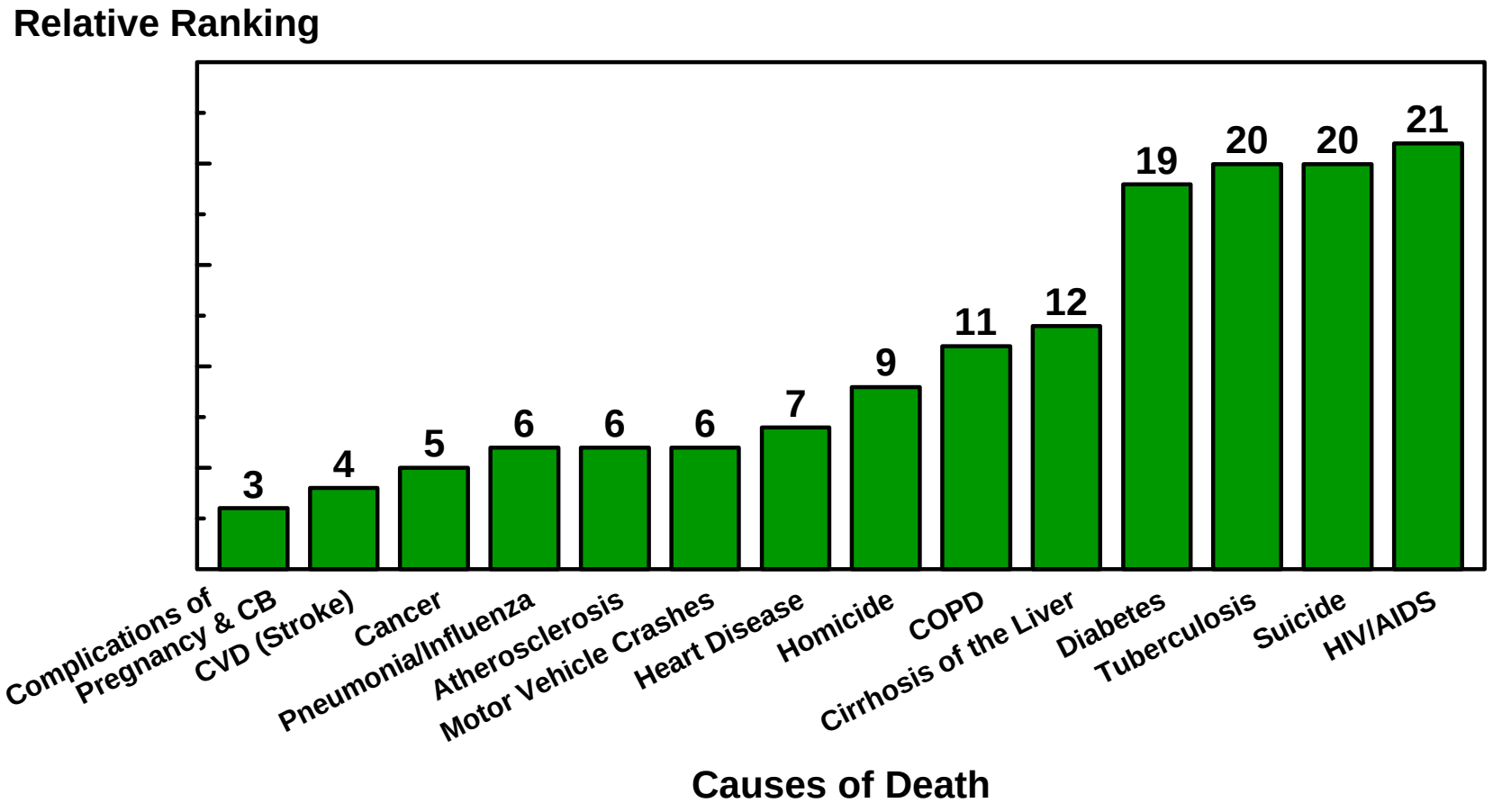
- The percent change in the number of Medicaid recipients from 1990 to 1997 put Tennessee 3rd among the States, with an increase of 131%, compared to a 33% increase for the U.S.

- Tennessee's cost per recipient of Medicaid in 1997 was $2,074, compared to $3,679 for the U.S. This low cost figure put Tennessee 48th, with only Arizona and Hawaii featuring lower costs per Medicaid recipient.

- Finally, Tennessee ranked 44th in terms of change in Medicaid costs per recipient from 1990 to 1997 among all States. Tennessee's increase was 9.4%, compared to a 43% increase for the U.S.

- Medicaid managed care enrollment in Tennessee ranked second in 1997, after California, with 7.8% of all U.S. Medicaid enrollees in that year reported in Tennessee. In 1998, Tennessee ranked 3rd in Medicaid HMO enrollment, at 6.8% of the U.S. total.

Tennessee's Relative Rankings on Some Key Health Indicators Compared to Other States, Based on Age-Adjusted Death Rates for 1996



NOTE: Higher ranking indicates "better" values.
Source: Health Care State Rankings 1999: Health Care in the 50 United States, 7th Edition, Ed. KO and S Morgan, Morgan Quitno, Lawrence, Kansas, 1999

Health Care Resources

- Tennessee ranked:

  - 15th among states in the rate of physicians in primary care in 1997, at 94, compared to 96 per 100,000 in the U.S.;
  - 11th in the percentage of physicians who were specialists in 1997;
  - 39th in the rate of physician's assistants practicing in 1999;
  - 21st in the rate of registered nurses practicing in 1996; and
  - 30th in the rate of dentists in 1997.

Source: **Health Care State Rankings 1999: Health Care in the 50 United States.** Ed. Kathleen O'Leary Morgan and Scott Morgan. Morgan Quitno Press, Lawrence, Kansas, c. 1999.

THE HEALTH STATUS AND HEALTH CARE NEEDS OF ARRESTEES IN TENNESSEE

Special Health Care Needs of Adult and Juvenile Arrestees in Tennessee, 1995-1996

- The Tennessee Substance Abuse Need for Treatment among Arrestees (SANTA) study was conducted in 1995-1996 to produce statewide estimates of the prevalence of alcohol and other drug use, dependence, and need for treatment among adult and juvenile arrestees.

- Adult arrestees in Tennessee have a demographic profile that is strikingly <u>different</u> than that of the total adult population in the State based on the SANTA study.

    - While less than half of Tennessee's adult population is male, over three-quarters of all arrestees are male.

    - While 24% of Tennessee's population aged 19 and older is under 30, 48% of the adult arrestees are in this age-group.

    - While 17% of Tennessee's adult population is non-white, 46% of the adult arrestees are non-white.

- Adult arrestees have lower socio-economic status and levels of social support than do all other residents of Tennessee.

    - Although a majority (64.5%) of the adult arrestee sample have either graduated from high school or earned a GED, only 9.2% have had any education beyond high school.

    - In addition to lower education, arrestees are less likely to be employed and more likely to be on welfare than Tennessee's adult population. While 60% of Tennessee adults are employed full-time, only 47% of the adult arrestee sample has full-time employment, and only 8% of Tennessee's adult population is on welfare, versus nearly 13% of the adult arrestees.

    - The estimated median annual income for the adult arrestees is $12,000, compared to $28,639 in Tennessee households.

- Adult arrestees also appear to have fewer social ties than Tennessee's entire resident population. Only 19% of the arrestees are currently married and living with a spouse, compared to 57% of Tennessee's entire population. Furthermore, 45% of the adult arrestees have never been married, compared to 23% of Tennessee's entire adult population.

- Tennessee arrestees have much higher rates of alcohol and other drug use than Americans as a whole or Tennessee adults living in households.

  - Tennessee adult arrestees are much more likely to use alcohol, tobacco, marijuana and cocaine/crack as well as a host of other illicit and licit psychoactive drugs, compared to their adult general population counterparts in the State.

  - Adult arrestees are 43% more likely to use tobacco and 49% more likely to use alcohol than other adults. They are 30 times more likely to use heroin, 13 times more likely to use cocaine/crack and 10 times more likely to use both inhalants and hallucinogens. Compared to adults in general, arrestees are about 5 times more likely to use marijuana, 3 times more likely to use speed or stimulant drugs, but only about 50%-60% more likely to use sedatives/downers or tranquillizers.

  - The magnitude of heroin and cocaine use differentiates the two groups the most of any drugs used.

- Considering use in the past seventy-two hours, the five most common, recently used substance categories among Tennessee arrestees--excluding tobacco--are alcohol, marijuana, cocaine/crack, benzodiazepines, and barbiturates and "downers".

- The older an adult arrestee is, the more likely that the arrestee will report having used alcohol and tobacco. The younger an adult arrestee is, the more likely that the arrestee will report having used marijuana. The proportion of arrestees reporting recent use of cocaine/crack rises steadily with age until it peaks among arrestees aged 30-34.

- More than half of adult arrestees reported use of alcohol within 72 hours of their arrests for violent crimes, drug offenses, and other offenses. Tobacco use was even more commonly reported in the 72 hours before arrests for violent, property, drug, and other offenses. Eighty-two percent of those arrested for alcohol offenses also had used tobacco. Self-reported marijuana use in the 72 hours before arrest was especially likely to be reported by arrestees for drug offenses (56%), while cocaine/crack use was reported by 27% of arrestees charged with drug offenses, and 17% of those charged with property offenses.

- Marijuana appears to be most popular drug among younger arrestees. Nearly two-thirds (62%) of younger arrestees test positive for marijuana in urine tests. Although the proportion of arrestees testing positive for marijuana is quite high at every age, this proportion declines steadily with age to 14% among those aged 40 and over. The proportion of arrestees testing positive for alcohol increases steadily with age, rising from 17% among arrestees under 20 to 67% among arrestees 40

and older. The proportion of adult arrestees testing positive for cocaine and crack peaks at 44% in the age range 30-34 and 40% in the 35-39 age range, and falls precipitously to 17% among those 40 and older.

- Non-whites are more likely than whites to test positive for marijuana and cocaine. In fact, the proportion of non-whites testing positive for cocaine (44%) is nearly three times the proportion of whites (17%) testing positive for cocaine. Whites are more likely than non-whites to test positive for alcohol (53% versus 35%), heroin (4% versus 1%), barbiturates (5% versus 2%), and Valium (benzodiazepine) (18% versus 1%).

- Significantly higher proportions of male than female arrestees test positive for alcohol (49% versus 31%), marijuana (39% versus 31%), and barbiturates (4% versus 2%). About twice the proportion of female arrestees, compared with male arrestees, test positive for heroin (5% versus 2%). Also, a greater proportion of sample women than sample men test positive for cocaine (31% versus 28%) and Valium (14% versus 10%).

- Alcohol is the drug most frequently found in the urine/saliva of arrestees whose offenses are violent crimes (42%), while testing positive for marijuana (61%) or cocaine (42%) is highly correlated with drug arrests.

- Fully 62% of the sample needs some form of treatment for alcohol or other drug (AOD) abuse. The usual estimates of need for treatment in the general population of the United States are typically that about 10%-11% of the population needs treatment for alcohol abuse and other forms of substance abuse.

- The proportion of arrestees needing treatment climbs steadily from just under 40% of arrestees under twenty and plateaus at around 70% of arrestees in all age-groups from 30-34 and beyond.

- A higher proportion of male than female arrestees are in need of treatment. However, a higher proportion of female than male arrestees need treatment for drug abuse alone.

- White male and female arrestees are more likely to need this type of treatment than other arrestees.

- The highest prevalence of treatment need (96%) is found among arrestees whose most serious arrest charge is alcohol-related -- violations of liquor laws, illegal possession of alcohol, driving under the influence, or public drunkenness.

    - The second highest prevalence of need for substance abuse treatment (61%) is found among those whose most serious arrest charge is drug-

related -- possession, sale, or being under the influence of a controlled substance.

- Around half of violent crimes, property-related offenses, and other offenses involve arrestees who need AOD treatment. The need for treatment for alcohol abuse alone or in combination plays a larger role in violent crimes (representing about 42% of those arrested for violent offenses) than property offenses (at 37%). Need for drug treatment alone was more frequently observed among those arrested for property crimes, at 14% versus 8.8% of violent crimes.

  - This confirms a suspicion that AOD abuse and dependence play a role even in minor crimes. Among adult arrestees, no matter what the charge category, no less than half are in need of treatment.

- Overall, 66% of arrestees have ever needed substance abuse treatment, and almost as many (62%) currently need it.

- The treatment gap is defined as the proportion of those needing treatment but not receiving it. The lifetime treatment gap at non-urban sites is higher than the treatment gap among all adult arrestees. Among arrestees in non-urban sites who have ever needed treatment, 42% have never received treatment.

- While 78% of males currently needing treatment are not receiving it, nearly 87% of females currently needing treatment are not obtaining it. On the other hand, essentially identical proportions of whites and non-whites who currently need treatment are not receiving it (80%). Treatment gaps peak among arrestees aged 20-24 and decline for older ages. Treatment gaps are less among older prisoners (ages 35+), although still high (68%-75%).

- The treatment gap is largest for alcohol offenses. Among those arrested for these crimes, 37% of those who have ever needed treatment have never received it, and 86% of those with a current need for treatment are not getting it. The treatment gap is least among those arrested for drug offenses. Among those arrested for drug offenses, 25% of those who have ever needed treatment have never received it, and 72% of those with a current need for treatment are not getting it.

- Of adult arrestees who have ever received AOD treatment, 28% are now receiving treatment, more in non-urban sites, among older arrestees, among males, and among those arrested for drug-related offenses.

Highlights of Selected Comparisons Between Juvenile and Adult Arrestees from the Tennessee SANTA Arrestee Study, 1995-1996

- A higher percentage of juveniles were arrested for weapons offenses, stolen vehicles and other public disorder offenses, while a higher percentage of adult

arrestees were charged with assault, traffic offenses, DUI, public intoxication and drug sales. Juvenile and adult arrestees had similar prevalence of arrests for drug possession and larceny.

- Compared to juvenile arrestees, adult arrestees had higher prevalence of use of alcohol and every other drug with the major exceptions of marijuana and hallucinogens in the 30 days prior to arrest.

- Adults were more likely to test positive for most AOD use, compared to juveniles in this study. The former were also more likely to under-report or deny substance use than juvenile arrestees.

- Thus, 37% of juvenile arrestees reported AOD use in the 72 hours prior to arrest, while 41% tested positive for AOD. Among adult arrestees, 70% reported AOD use proximate to their arrest, with 78% testing positive for AOD use.

- Under-reporting is most serous for adults and youth when it comes to use of illicit drugs.

- Compared to adult arrestees in Tennessee, juvenile arrestees are less likely to need substance abuse treatment (43% versus 62%), specifically less likely to need treatment for <u>both</u> alcohol and other drugs (21% versus 31% of adults) and alcohol abuse alone (2% versus 21% adults). However juvenile arrestees are more likely to need treatment for drug abuse alone (20%) than adult arrestees (10%).

- The treatment gap is generally greater for youth in detention than for adults . For example, 87% of juvenile arrestees and 81% of adult arrestees need current treatment for substance abuse but had not received it in the past 12 months.

- If one in three juveniles entering Tennessee law enforcement agencies/detention centers is dependent on alcohol or other drugs and two in three adults arrestees are estimated to be dependent, the challenge for detention centers to coordinate and focus resources to target substance abuse among residents is clear.

<u>Physical Health Among Arrestees</u>

- Forty-two percent of adult arrestees and 36% of juvenile arrestees in Tennessee report fair or poor physical health, with the former more than twice as likely to report poor health (13% versus 6% respectively).

- Eighteen percent of adult arrestees, compared to 12% of juveniles, report some form of disabling condition that interferes with normal functioning or roles.

- Lifetime prevalence of selected communicable diseases and injury is very high among arrestees. Thus,

- hepatitis was reported by 10% of adult arrestees and 6.4% of juvenile arrestees;

- tuberculosis was reported by 4.4% of adults and 3.5% of juveniles arrestees;

- HIV/AIDS was reported by 1.9% of the former and 1.1% of the latter groups;

- 22% of adult arrestees and 12% of juveniles reported having had or been treated for sexually transmitted diseases.

- Serious injury was reported by 57% of adult arrestees and 47% of juveniles, while other major health problems were reported by 18% of both groups.

- Both self-inflicted and other-inflicted violence was frequently reported by arrestees, regardless of adult status.

  - Seventeen percent of adults and 20% of juveniles had attempted suicide in their lifetimes, and among the suicide attempters, adult arrestees were much more likely to have used alcohol (57%), compared to juvenile attempters (14%).

  - Seventeen percent of adult arrestees and 29% of juvenile arrestees had been injured in a physical fight in the 12 months prior to their arrest.

  - Twenty-three percent of adults and 27% of juveniles reported physical assault or abuse, including sexual abuse, in the 12 months prior to arrest.

- Youthful arrestees were much more likely to report risk factors related to violence than were adult arrestees.

  - Sixty-seven percent of juvenile arrestees, compared to 33% of adult arrestees, had gotten into a physical fight in the 12 months prior to arrest;

  - 36% of the former and 7% of the latter had been in a gang fight in the 12 months before their arrest;

  - 40% of the former and 23% of the latter had carried weapons in the past 12 months.

Mental Health of Arrestees

- Besides excess risk of self-inflicted violence in the form of suicide attempts, arrestees are highly likely to report fair or poor, compared to excellent, very good or good mental or psychological health.

- One in three arrestees report often or almost always being depressed -- 31% of adult arrestees and 36% of juvenile arrestees, with 15% and 19%, respectively, reporting almost always being depressed.

- Despite similar prevalence of self-reported mental health problems among the two groups, juvenile arrestees were more likely to have received mental health treatment (25%) than their adult counterparts (18%).

Utilization of Medical Care Services

- Not unexpectedly, utilization of medical care services is relatively high for arrestees, particularly for juvenile arrestees, whose utilization matches or exceeds that of adult arrestees.

  - Fifty-seven percent of adult arrestees and 63% of juvenile arrestees had visited a physician or other health care provider at least once in the past 12 months;

  - Forty-one percent of adults and 40% of juvenile arrestees had visited an emergency room at least once in the 12 months before the survey.

  - Sixteen percent of each group had been admitted to a hospital at least once in the 12 months prior to arrest.

  - One possible explanation for the high utilization of services by juvenile arrestees is their insurance profile. Only 11% of juvenile arrestees had no health insurance compared to 36% of adults. However, 10% of juvenile arrestees did not know their insurance status, compared to only 1% of adult arrestees.

- A similar proportion -- 15%-16% -- of juvenile and adult arrestees reported having trouble obtaining medical care when they needed it.

Pregnancy

- A total of 239 female arrestees were included in the study. Fifteen percent of adult female arrestees were pregnant, while 1% either did not know their pregnancy status or refused to answer the question. Among juvenile female arrestees, 17% reported pregnancy, with 5% uncertain or refusing to answer.

Homelessness among Arrestees at the Time of Arrest

- A relatively high proportion of both adult and juvenile arrestees had been homeless in the 12 months prior to the survey -- 19% of adults and 14% of juveniles reported this condition.

- Four percent of adult arrestees but less than 1% (0.4%) of juvenile arrestees said that they had been living on the street prior to arrest; 1.3% and 0.7% lived in shelters, respectively.

- This prevalence of homelessness and that fact that only 75% of adult arrestees had been living where there was telephone service suggest that arrestees are indeed a group who are frequently missed in household telephone surveys.

A Special Consideration of Gender and Racial Differences in Health Status among Adult Arrestees

- Black adult arrestees in Tennessee had significantly higher prevalence of serious injuries (62%) and other major health problems (22%) compared to their white counterparts (50% and 14%, respectively) . Blacks also had higher prevalence of most communicable diseases than did white adult arrestees;

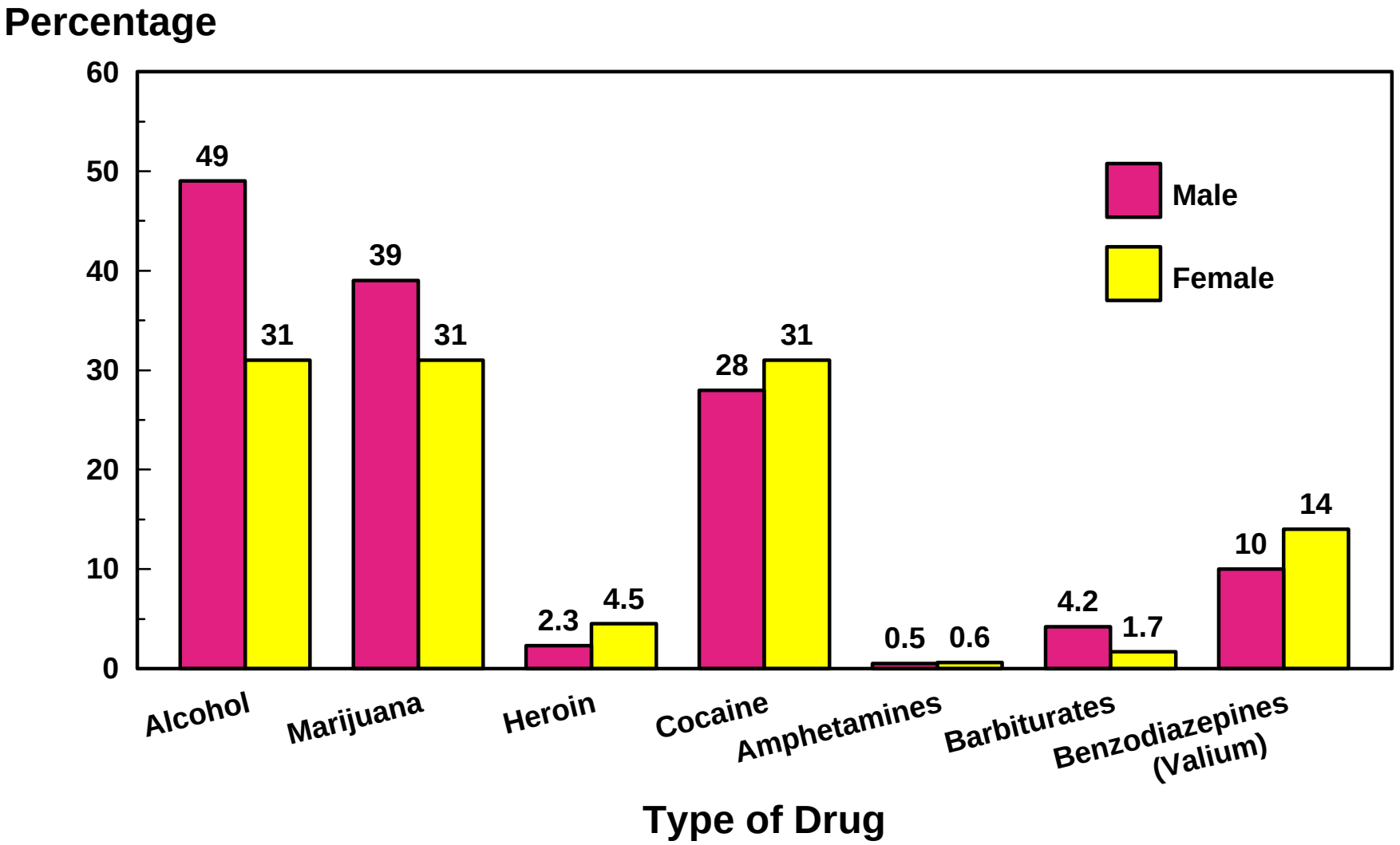
- Compared to white arrestees, black adult arrestees had higher prevalence of hepatitis (11% and 8%, respectively) and of AIDS (2.7% and 1.2%, respectively).

- White adult arrestees had higher prevalence of tuberculosis, with a lifetime prevalence of 5.3%, compared to 3.3% among blacks, and 4.2% overall.

- White arrestees also had higher rates of sexually transmitted diseases at 37%, compared to 10% among black arrestees, and 22% overall.

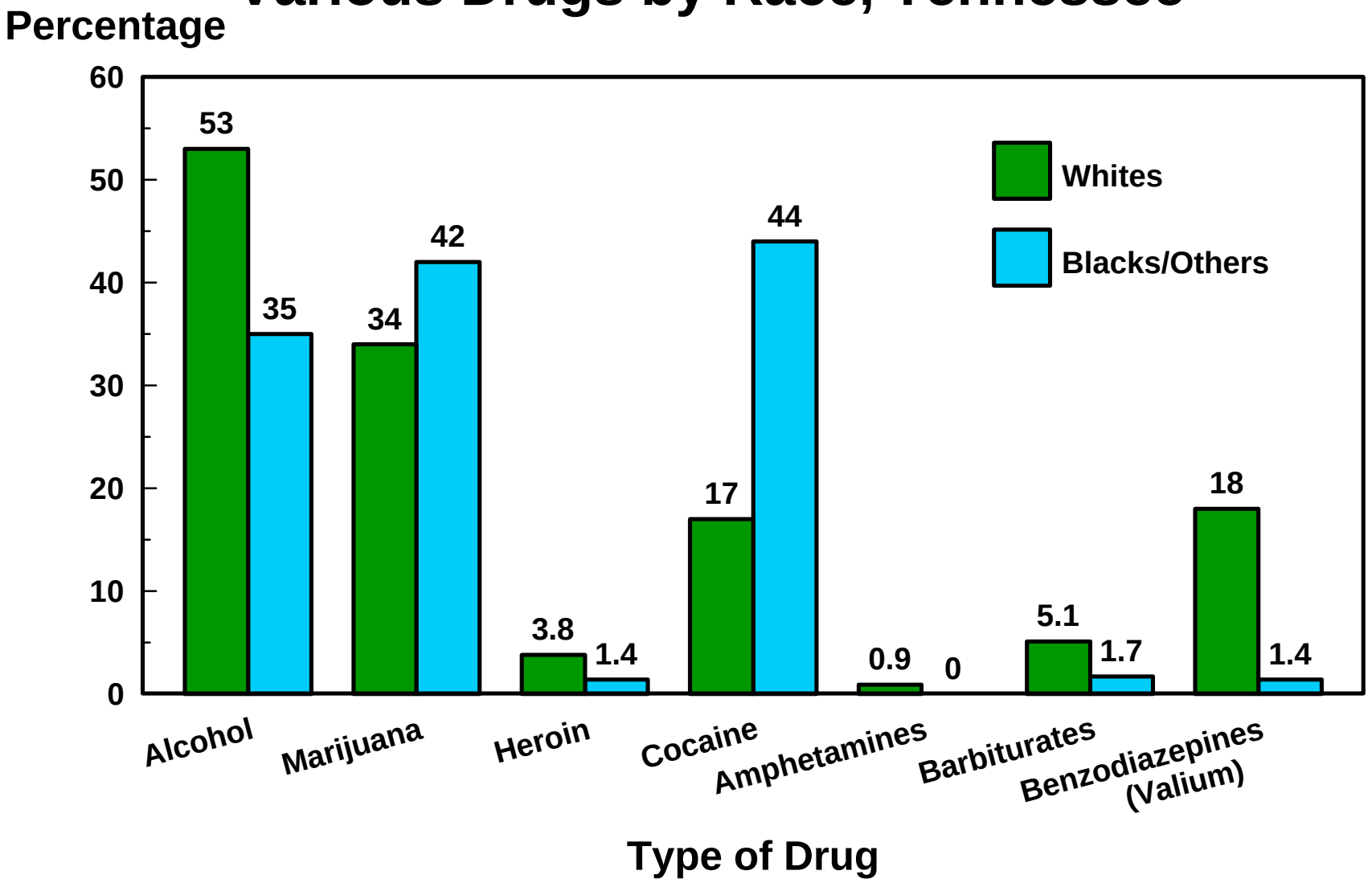
- This report, **The Tennessee SANTA Adult and Juvenile Arrestee Study, 1995-1996**, is available through “Reports” on the Health Information Tennessee (HIT) Web site at **server.to/hit** and from the Community Health Research Group at The University of Tennessee, Knoxville, Suite 309, UT Conference Center Building, Knoxville, Tennessee 37996-4133.

Percent of Adult Arrestees Testing Positive for Various Drugs by Gender, Tennessee



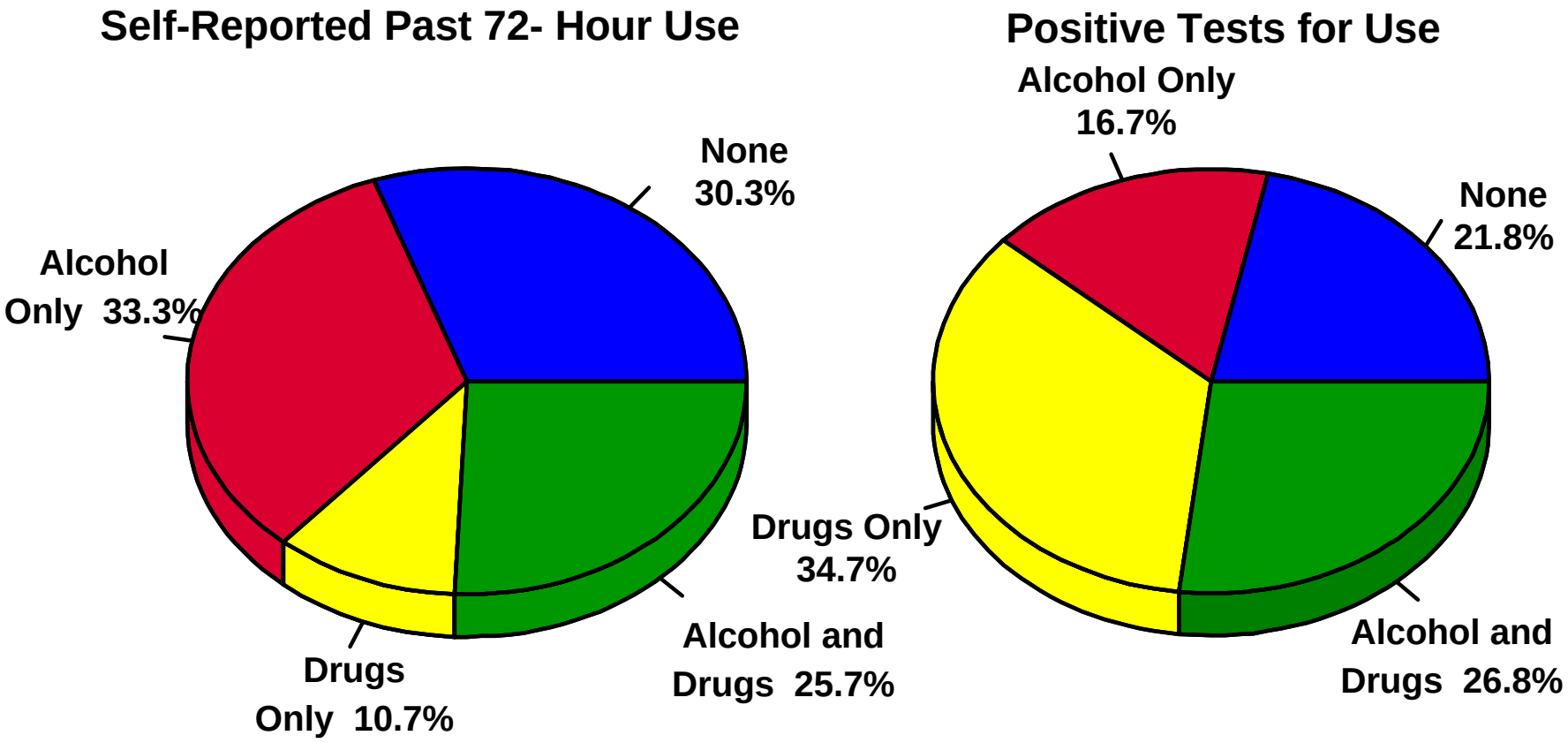
Source: Tennessee Adult SANTA Arrestee Study, CHRG-TDH, 1995-1996

Percent of Adult Arrestees Testing Positive for Various Drugs by Race, Tennessee



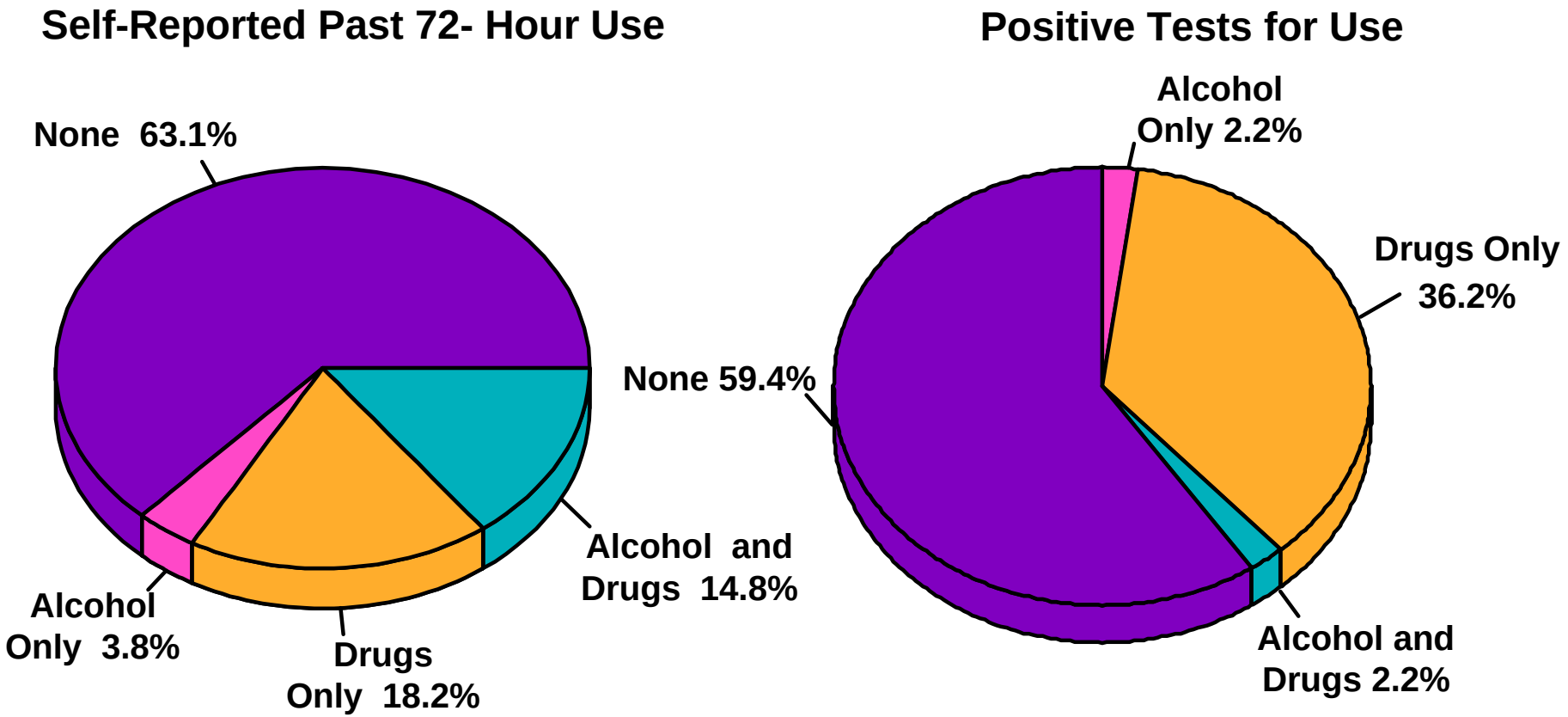
Source: Tennessee Adult SANTA Arrestee Study, CHRG-TDH, 1995-1996

Self-Reported Past 72-Hour Use and Positive Tests for Use of Substance Combinations by Adult SANTA Arrestees, Tennessee



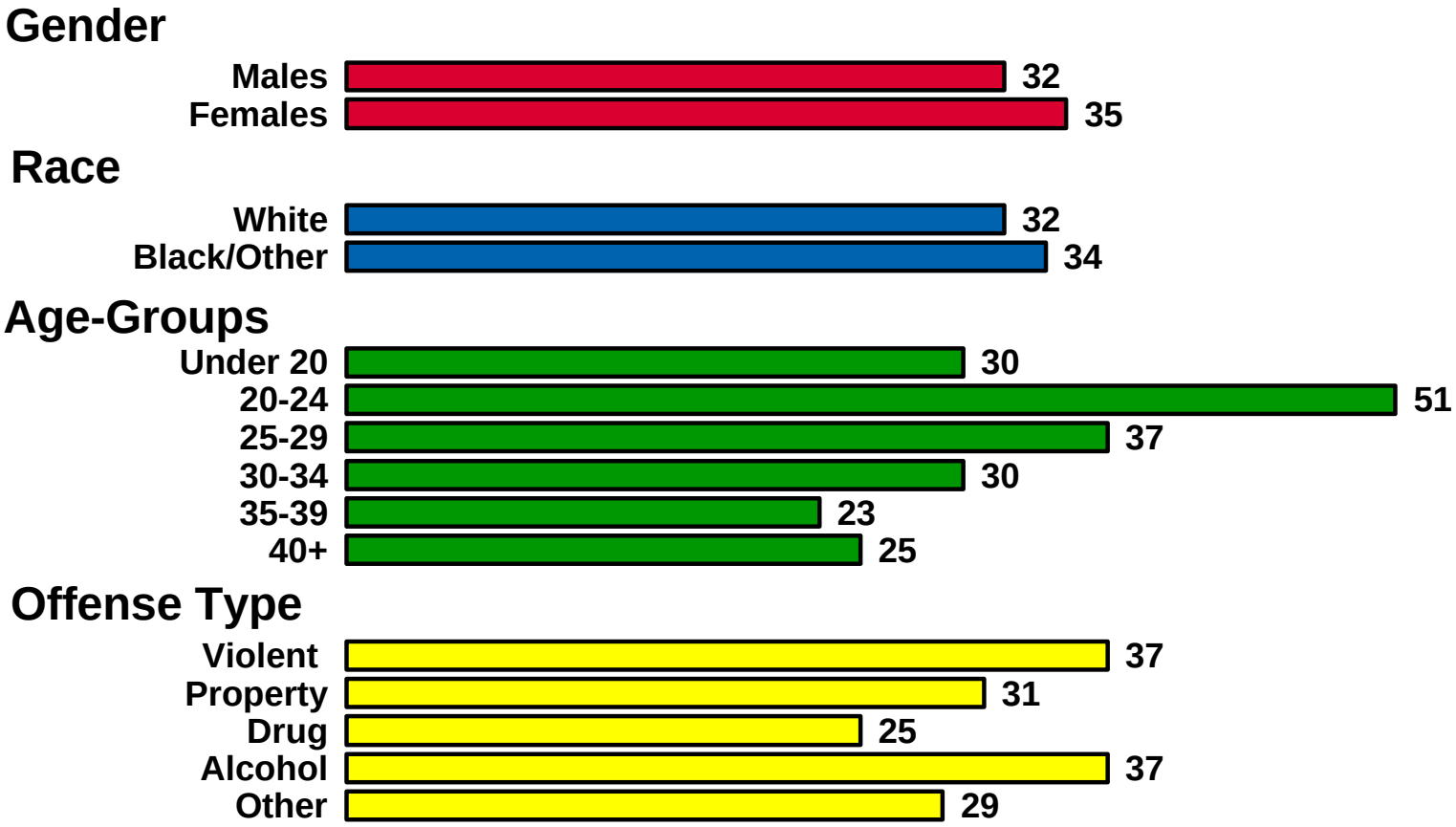
Source: Tennessee Adult SANTA Arrestee Study, CHRG-TDH, 1995-1996.

Self-Reported Past 72-Hour Use and Positive Tests of Substance Combinations by Juvenile SANTA Arrestees, Tennessee



Source: Tennessee Juvenile SANTA Arrestee Study, CHRG-TDH, 1995-1996.

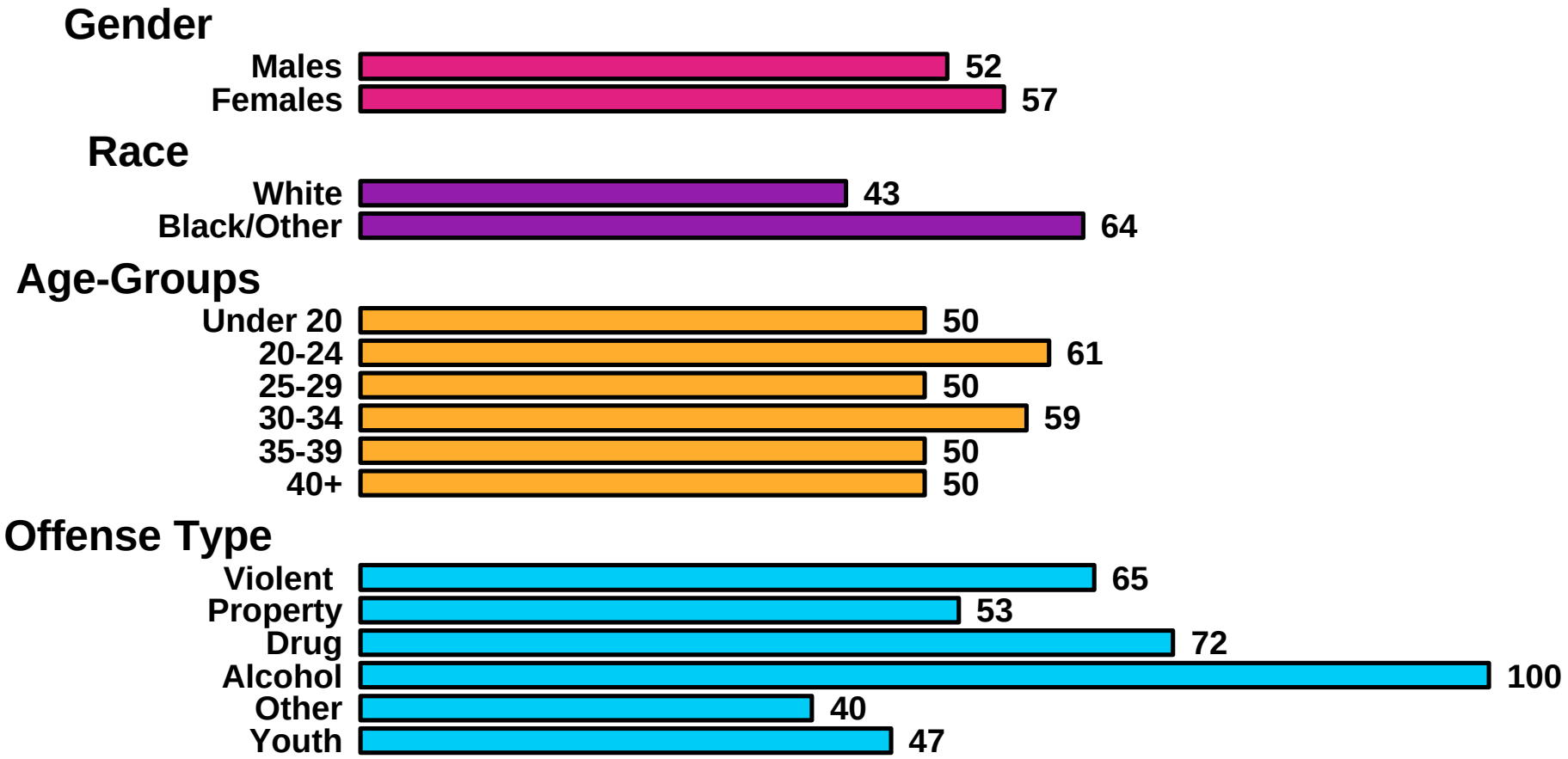
The Treatment Gap[1] among Adult SANTA Arrestees by Gender, Race, Age-Group and Type of Offense, Tennessee



[1] Treatment Gap = Proportion of those ever needing AOD treatment who have never received such treatment

Source: Tennessee Adult SANTA Arrestee Study, CHRG-TDH, 1995-1996

The AOD Treatment Gap among Juvenile Arrestees by Gender, Race, Age-Group and Type of Offense, Tennessee



Treatment Gap = Proportion of those ever needing AOD treatment who have never received such treatment

Source: Tennessee Juvenile SANTA Arrestee Study, CHRG-TDH, 1995-1996

EMERGENCY ROOMS AS SITES OF PRIMARY CARE DELIVERY AND INTERVENTION OPPORTUNITIES

Sociodemographic Comparison of ER Patients with Adult Tennessee Population

- The Tennessee Hospital Emergency Room Drug Study was conducted to produce statewide estimates of adult patients' prevalence of alcohol and other drug use, dependence and need for treatment. In comparison to corresponding members of the general population in Tennessee, the emergency room (ER) sample was found to be overrepresentative of the young, females and blacks. Forty-five percent of the sample were ages 18-34 years versus 35% of Tennesseans. Females comprised 57% of the ER sample and 53% of the State adult population. Whereas blacks comprised 14% of adult Tennesseans, they accounted for almost one-quarter of the ER patient sample.

- ER patients differed substantially from the adult Tennessee population in marital status, educational attainment, employment status and household income. The patients were less likely to be married (46% versus 57% of adult Tennesseans), more likely to be separated or divorced (21% versus 11%), and less likely to have education beyond high school (13% versus 37%) and be in the labor market (60% versus 71%). Unadjusted for inflation, their median household income of $16,237 was 43% below that reported by Tennesseans in the 1990 United States' Census.

Alcohol and Other Drug Use, Dependence and Need for Treatment among Adult ER Patients

- The highest prevalence of drug use by ER patients occurred with caffeine, alcohol, and tobacco. Legal and readily accessible, these substances predominated in nearly every age, race, and gender-group. Patients also reported wide use of controlled substances, whether licit or illicit. During the 30 days prior to the ER interview, for example, 13% of respondents reported that they had used Schedule IV opioids, 9% tranquilizers, 6% sedatives, and 8% marijuana. One percent of patients reported 30-day use of cocaine.

- Use of alcohol and illegal[3] drugs by ER patients declined with advancing age. Males were more likely than females to report AOD use, and this differential widened as the period of observation shrank from lifetime use to 12-month use to 30-day use.

- Male ER patients showed a much higher prevalence of alcohol and illegal[3] drug use than female patients, but this gender differential shrank across reporting periods

[3]Based on self-report, illegal drugs comprised marijuana, cocaine, heroin, hallucinogens, and inhalants.

from lifetime to 30-day use. Generally, gender differentials were far larger for use of alcohol, tobacco, cocaine, and marijuana than of prescription drugs, such as stimulants, tranquilizers, sedatives, and prescription opioids.

- White ER patients reported substantially higher prevalence of use of tobacco, stimulants, prescription opioids, tranquilizers and sedatives than black patients. Black patients reported higher use of alcohol, marijuana and cocaine within 12 months and 30 days of the survey. Combined use of alcohol and illegal[3] drugs was also higher among the black patients.

- Injured patients were more likely to test positive for alcohol and/or illegal[4] drug use than ill patients (21% versus 13%). Injured patients exhibited an excess prevalence of positive test results for alcohol and marijuana specifically, the presence of alcohol only, and illegal[4] drugs in the absence of alcohol.

- About 5% of ER patients reported abusing prescription drugs within 12 months of the survey. Respective percentages of abuse in specific categories were 2.6% for tranquilizers, 2.2% for stimulants, 1.8% for sedatives, 1.6% for analgesics and 1.1% for opioids. Of those reporting use of stimulants, 63% admitted abuse, i.e., using them "sometimes," "often" or "always" for nonmedical purposes. At the other extreme, the corresponding figure for abuse of analgesics was only 5%. Drug screening results suggest that self-reported abuse of prescription drugs markedly underestimated the true figure for abuse.

- Almost one-quarter of ER patients have been dependent on alcohol and/or other drugs (AOD) at some time during their lives. Approximately one out of every five patients, who present in hospital ERS across Tennessee, needs AOD treatment at any given point in time.

- While one-third of ER patients reported receiving AOD treatment in their lifetimes, less than 5% were receiving treatment currently; that is, at the time of the survey. The current treatment gap is defined as the difference between the percentage of those needing treatment and those currently receiving it. This gap is enormous. Over 95% of patients who need AOD treatment in Tennessee are not receiving any.

- Alcohol and other drug (AOD) problems abound among Tennessee's ER population. AOD use, abuse and dependence are likely to underlie many ER visits and have implications for the course of treatment prescribed by medical personnel, and the degree to which patients will comply with that treatment. The ER is a natural setting in which to screen for AOD use, abuse and dependence, and hence to identify patients who might benefit from treatment.

[4]Based on test results, illegal drugs comprised marijuana, cocaine, and phencylidine (PCP).

Health Status, Insurance Status and Regular Provider Affiliation among Emergency Room Patients in Tennessee

- Fair or poor health is reported by more than one in three ER patients (35%), compared to less than 1 in 5 adults in the household population (18%).

- Similarly, ER patients are more likely than adult householders to report disability that keeps them from doing normal tasks. Thirty-one percent of the former and 13% of the latter report disability.

- Utilization of medical services - physician, emergency room and hospital services - is higher among ER patients during the 12 months prior to the survey than among adults in general.

    - Eighty-two percent of ER patients, but only 38% of adults, had made one or more visits to a physician or health care provider in the last 12 months.

    - Forty-nine percent of ER patients, compared to 19% of adults, had visited an ER at least once in the last 12 months.

    - Twenty-six percent of ER patients had been hospitalized at least once in the previous 12 months, compared to 11% of adults.

- However, despite their higher utilization of services, ER patients were less likely to be insured and much more likely to be on TennCare than adults in the general population.

    - Ninety-two percent of adults living in Tennessee households, but only 87% of patients in the Tennessee emergency room sample, had health insurance. Alternatively stated, 13% of ER patients, compared to 8% of adults, lacked health insurance coverage.

    - Forty percent of ER patients, compared to 64% of adults, had private health insurance.

    - Thirty-four percent of ER patients, compared to 11% of adults, were covered by TennCare.

    - Twelve percent of ER patients and 14% of adults in households were covered by Medicare as their primary insurance source.

    - One percent of ER patients and 3% of adults had other forms of health insurance.

- Nearly twice the proportion of ER patients (26%) as adults living in Tennessee households (14%) lacked regular provider affiliations (a regular source of health care).

- **Summary:** ER patients clearly are sicker and more disabled than adults in general, and they are more likely to utilize medical care services as a result. However, the fact that ER patients are more likely to lack "medical homes," i.e. affiliations with physicians or other health care providers, and be on TennCare or to lack health insurance altogether suggests that they are at-risk of falling through the cracks of the health care system. They may be likely to postpone or forego needed care due to lack of access, until their medical condition worsens and an expensive ER visit or hospitalization results.

Characteristics of Emergency Room Patients with Mental Health Problems

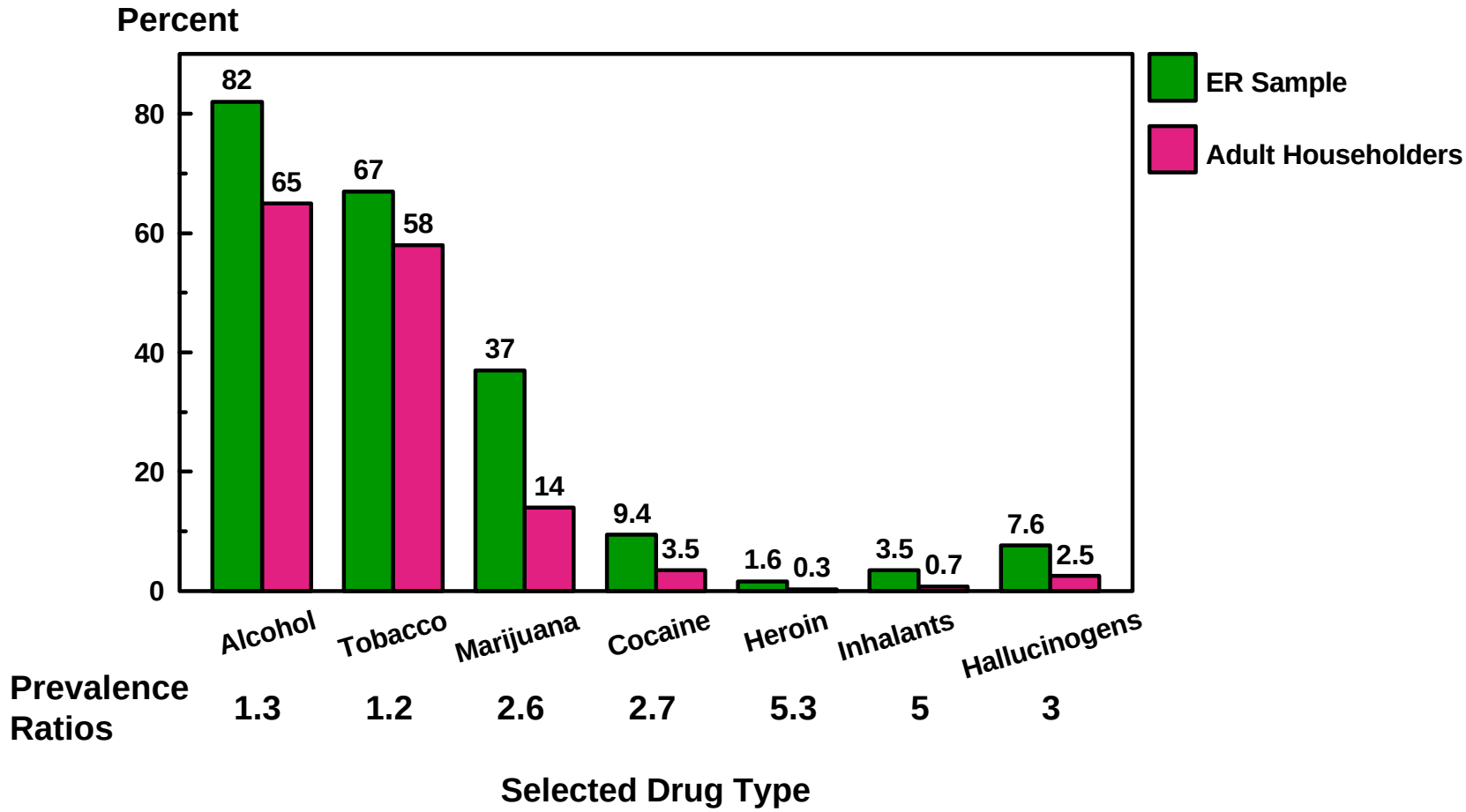
- Three times more ER patients reported depression than adults in general. About 21% of ER patients reported often or almost always feeling depressed, compared to 9% of adults in the general household population in 1998.

- Three times more ER patients (9%) had attempted suicide at some time in their lives than had adults living in households in Tennessee (2.7%).

- However, very little difference is noted in these two groups' utilization of mental health services: 14% of ER patients, compared to 12% of adults in the general population, had been treated for mental health problems in their lifetimes.

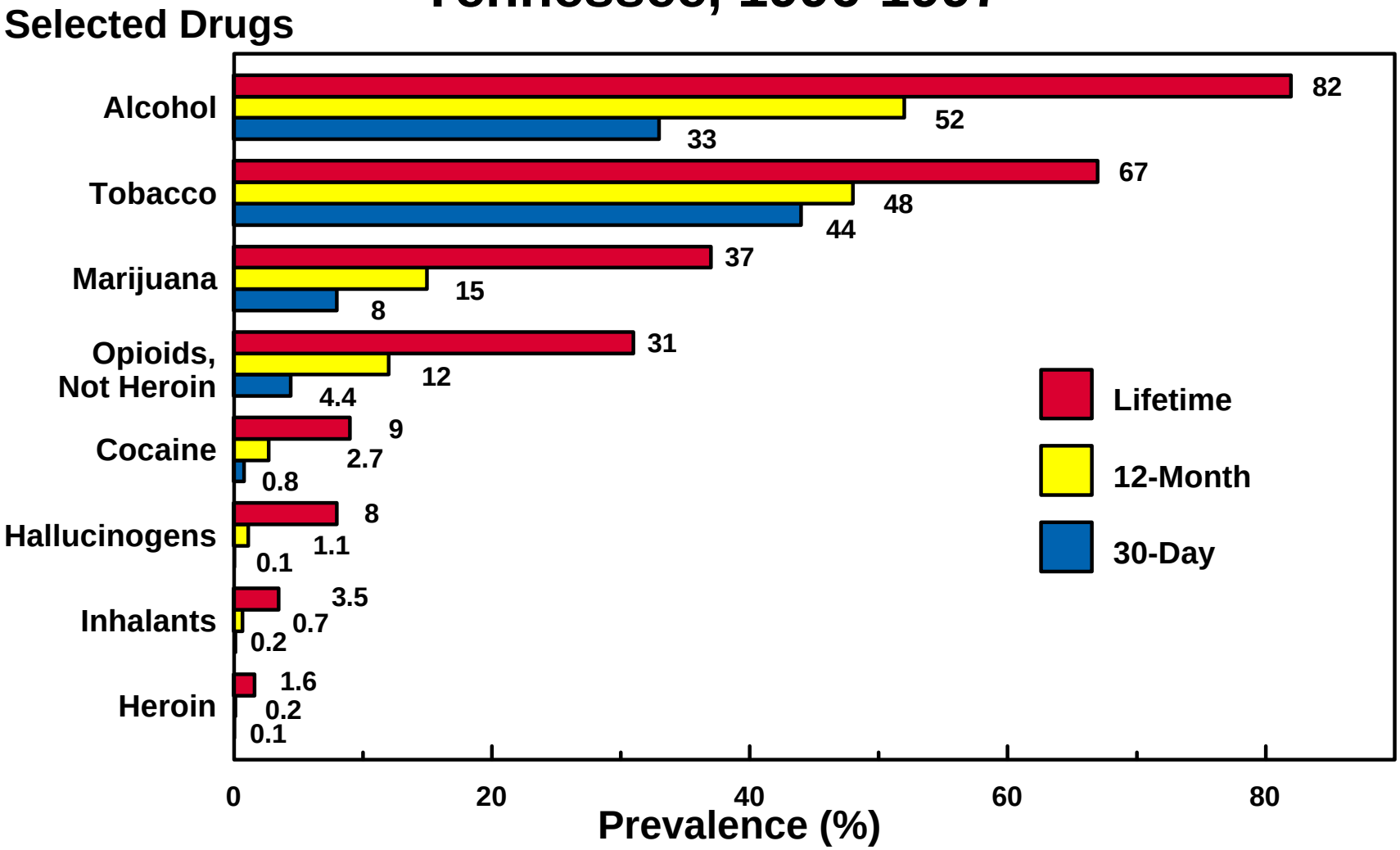
- This near parity in receipt of mental health treatment reflects a wide treatment gap for emergency room patients, who appear to be three times more in need of mental health treatment but no more likely to receive it than adults living in Tennessee households.

Comparison of Lifetime Prevalence of AOD Use among ER Patients and Adults Living in Households, by Selected Drug Type, Tennessee



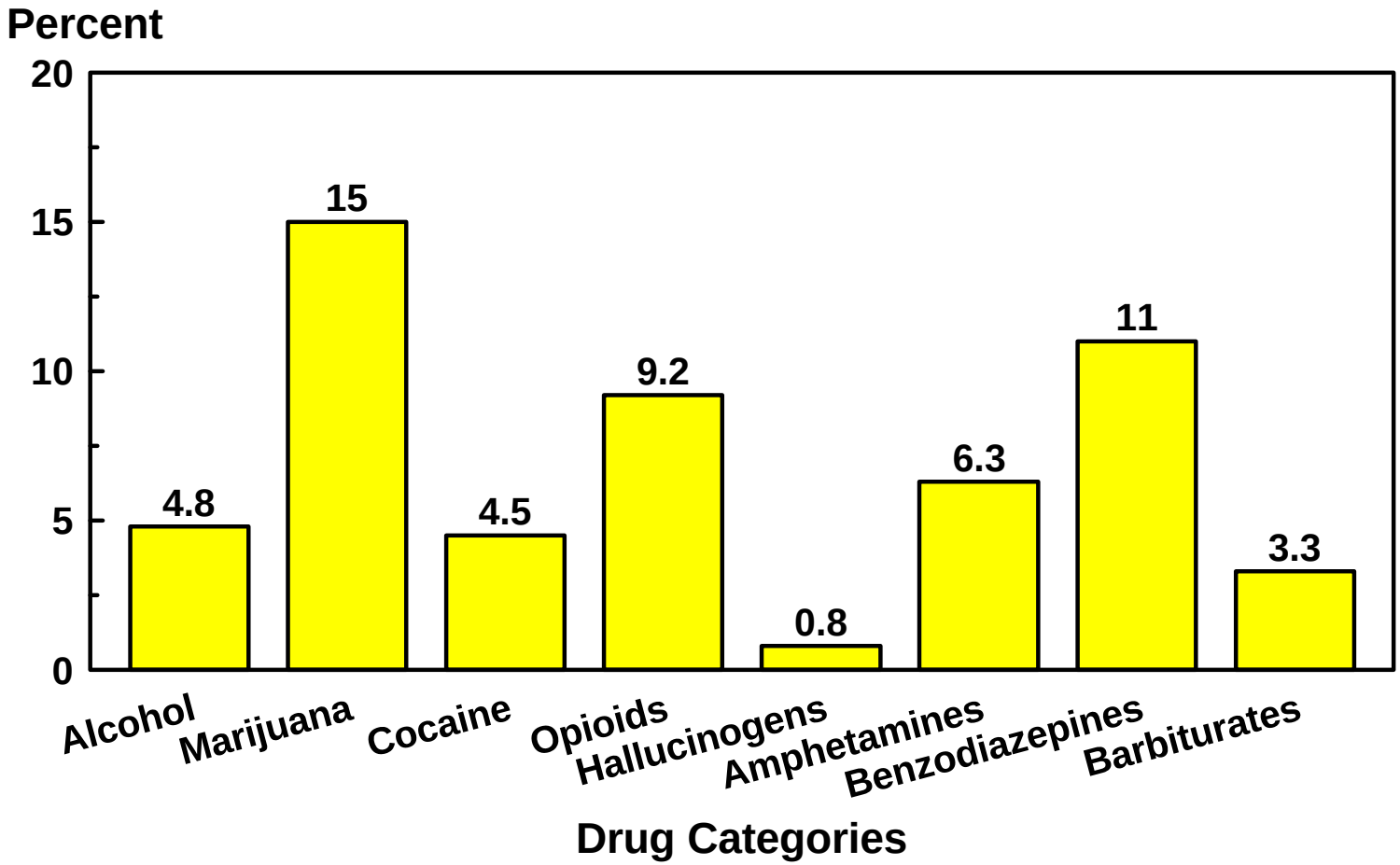
Source: Tennessee Hospital Emergency Room Drug Study, 1996-1997 and Tennessee Alcohol and Other Drug Needs Assessment Survey of Adults, 1993

Lifetime, 12-Month and 30-Day Prevalence of Selected AOD Use among Emergency Room Patients, Tennessee, 1996-1997



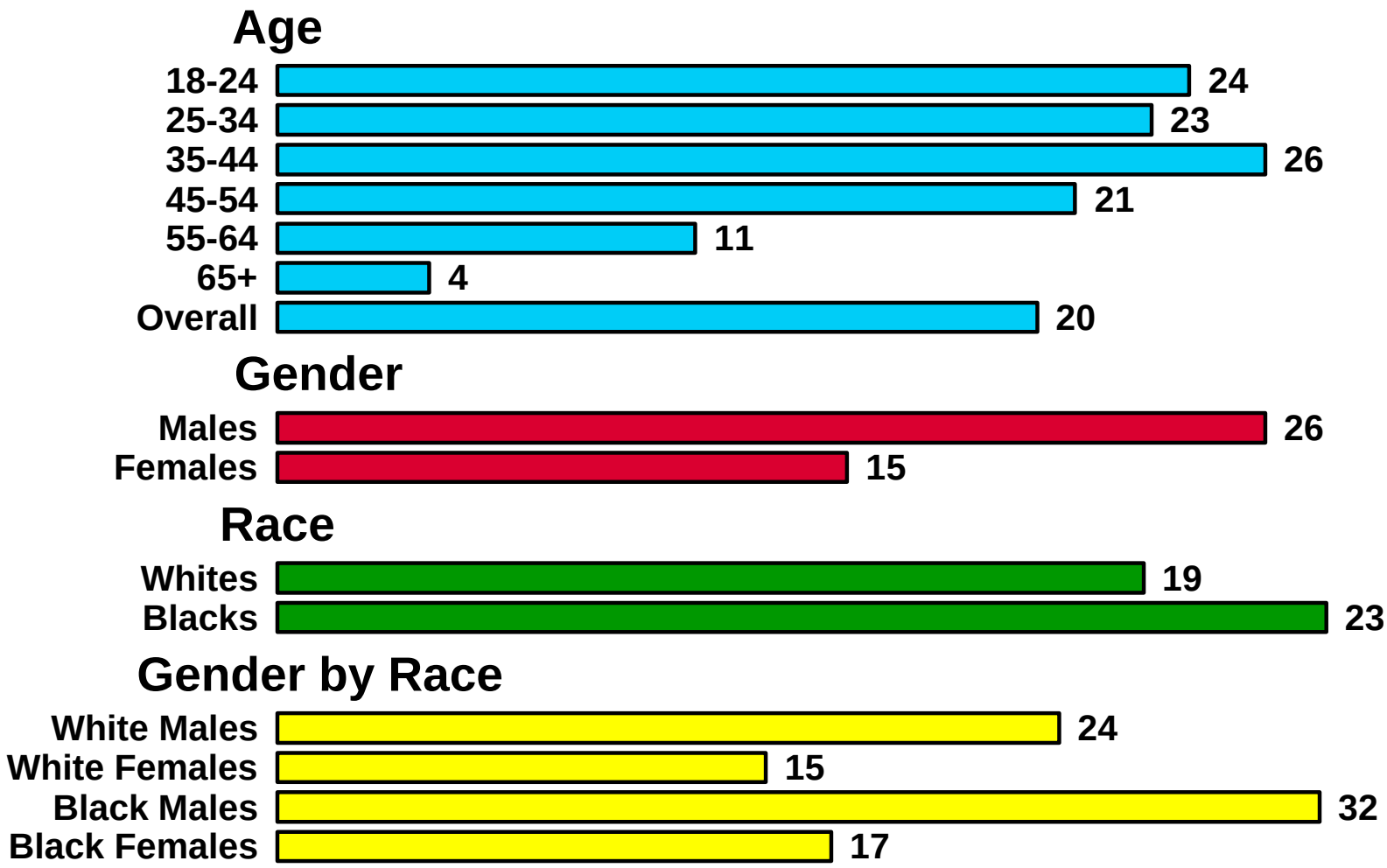
Source: Tennessee Hospital Emergency Room Study, CHRG-TDH, 1996-1997

Percent Positive Urinalysis and Saliva Test Results by Drug Category, Tennessee



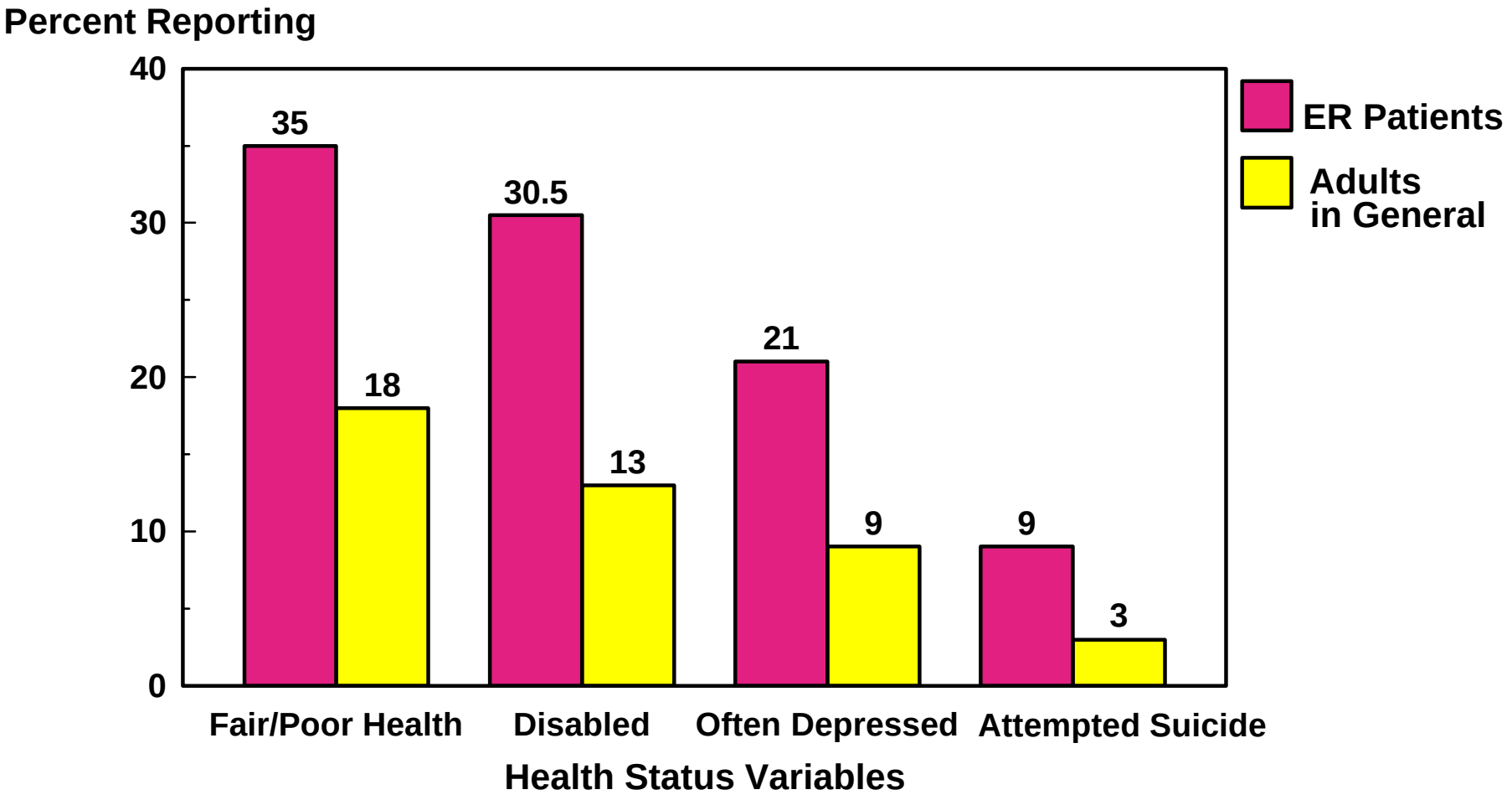
Source: Tennessee Hospital Emergency Room Drug Study, CHRG-TDH, 1996-1997

Percent of ER Patients Currently Needing AOD Treatment by Age, Gender and Race, Tennessee



Source: Tennessee Hospital Emergency Room Drug Study, CHRG-TDH, 1996-1997

Comparison of Physical and Mental Health Status of ER Patients and Adults in the Household Population of Tennessee, 1997-1998



Source: Tennessee Hospital ER Drug Study, 1996-1997 and Tennessee Health and Lifestyles Survey, 1998, CHRG-TDH.

SEVERE WORK DISABILITY IN TENNESSEE, 1993-1995

- Severe work disability, defined as the inability to work due to a health condition or impairment, is a substantial problem in the United States. According to the 1996 Behavioral Risk Factor Surveillance System (BRFSS), one in 20 Americans aged 18-64 years old had a severe work disability. In 1995, the rate was 4.8%, compared to 5.1% in 1996.

- Tennessee had a severe work disability rate of 6.9% in 1995, 44% higher than the rate for the nation. Tennessee ranked third highest in severe work disability among the 50 states and the District of Columbia. Only West Virginia and Kentucky had higher rates.

- The severe work disability rates in the U.S. have been relatively stable over time. From 1993 to 1996, the rates were 4.5%, 4.8%, 4.8%, and 5.1%, respectively. The corresponding rates in Tennessee were 6.0%, 4.9%, and 7.0% from 1993 to 1995 (data for 1996 are not available).

- The risk of having a severe work disability is strongly related to some sociodemographic characteristics. Combining 1993-1995 Tennessee BRFSS data, it was observed that:

    - The severe work disability rate increased steeply with age. People 45 to 64 years old were approximately 3.6 times more likely to be work-disabled than those aged 18 to 44.

    - Females had a slightly higher (17%), but not statistically significant, risk of being severely work disabled than males.

    - Non-whites were approximately 33% more likely to be severely work disabled than whites.

    - Those who did not complete high school had five times higher severe work disability rates than those who completed high school.

    - People with annual household incomes of less than $15,000 were 5.7 times more likely to report having a severe work disability than those earning $15,000 or more per year.

    - The relationship between low income and low education, on the one hand, and severe work disability, on the other hand, was also found for each age, gender, and race subgroup.

    - All of these findings for Tennessee were consistent with those based on national-level BRFSS data and previous reports.

- Counties in East Tennessee had higher severe work disability rates than counties in other parts of the State[5]. In 1995-1996, the five counties with the highest rates were Polk, DeKalb, Clay, Jackson, and Hancock. The first four are in Southeast Tennessee; the last is in Northeast Tennessee. The lowest rates were observed for five counties - Moore, Sumner, Wilson, Rutherford, and Williamson, all in the Mid-Cumberland Region of Tennessee. The latter are among the counties with the highest per capita income and educational levels in the State[6].

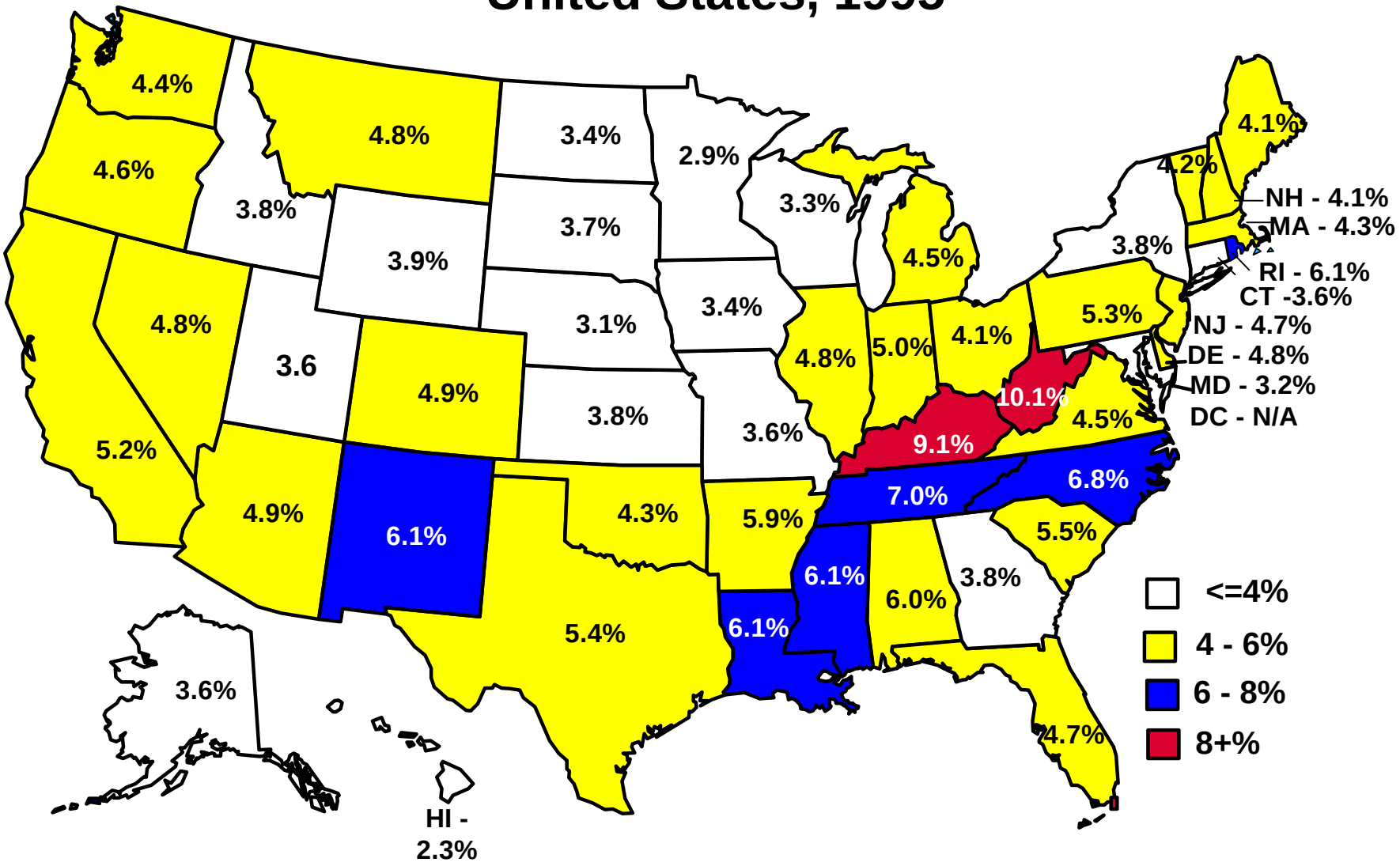
- The top five counties with the highest relative increases in severe work disability rates since 1990 were Polk, Jackson, Lauderdale, DeKalb, and Decatur Counties. The five counties with the highest relative decreases in severe work disability rates were Sequatchie, Campbell, Scott, Johnson, and VanBuren.

Source: Borawski, E., H. Jia and G. Wu. 1999. Use of the BRFSS in estimating disability at state and substate level: definition, estimation and validation. Technical Report for the Centers for Disease Control and Prevention, Atlanta, GA.

[5]The sub-state level severe work disability prevalence rates for Tennessee were estimated based on small area analysis techniques to ensure high validity and reliability. This is necessitated by very small sample sizes at the county level. In order to understand such county-level data better, 95% confidence intervals for estimates were also given.

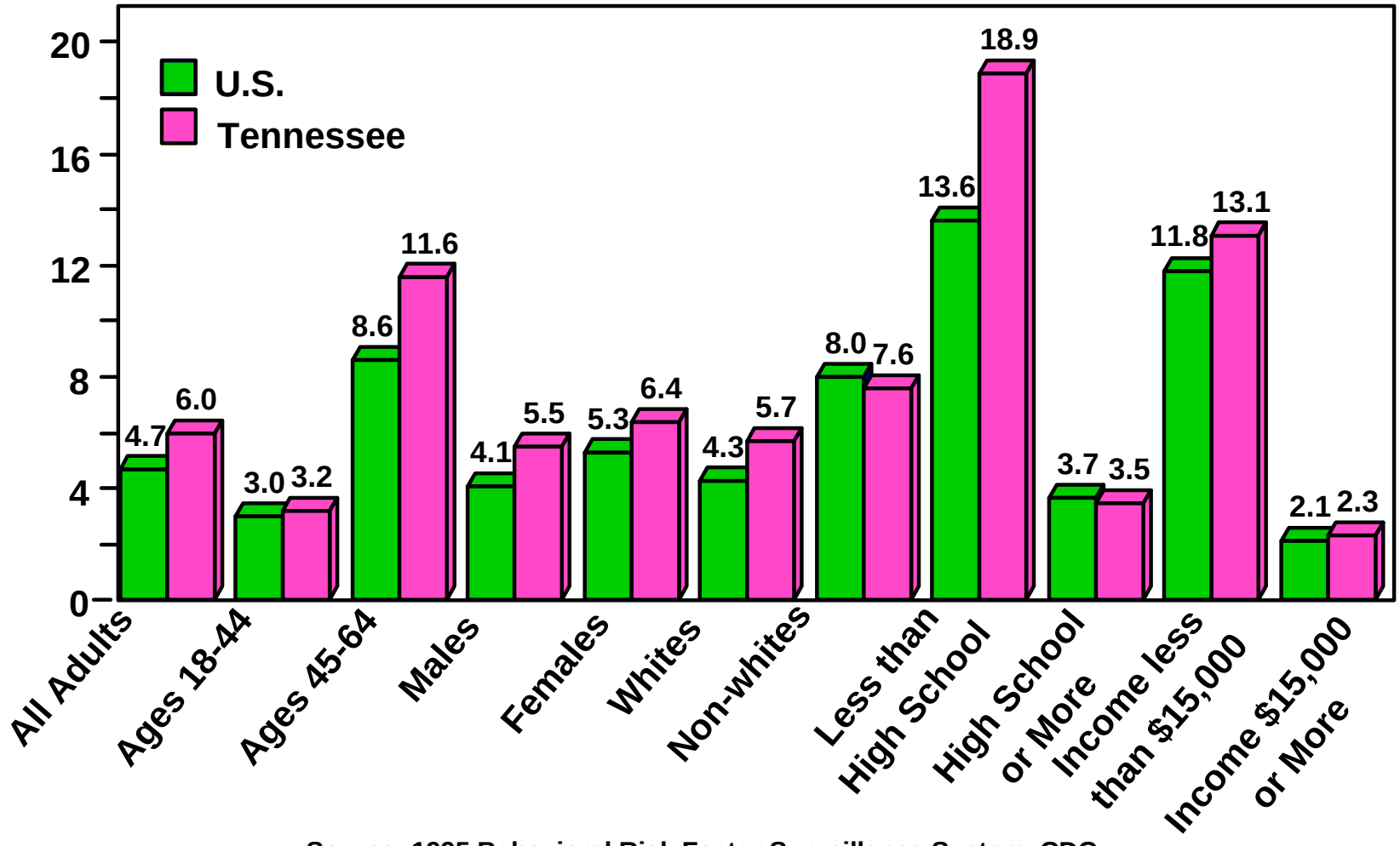
[6]County-level estimates of work disability rates were consistent with 1990 Census data in which questions about work disability were asked. In 86 counties (91%), the relative differences between 1995-1996 BRFSS work disability rates and 1990 Census work disability rates were less than 30%, and in 80 counties (84%), the absolute difference was less than 2%. This suggests relative stability of the results over time and data sources.

The Severe Work Disability Rate Among Adults, United States, 1995



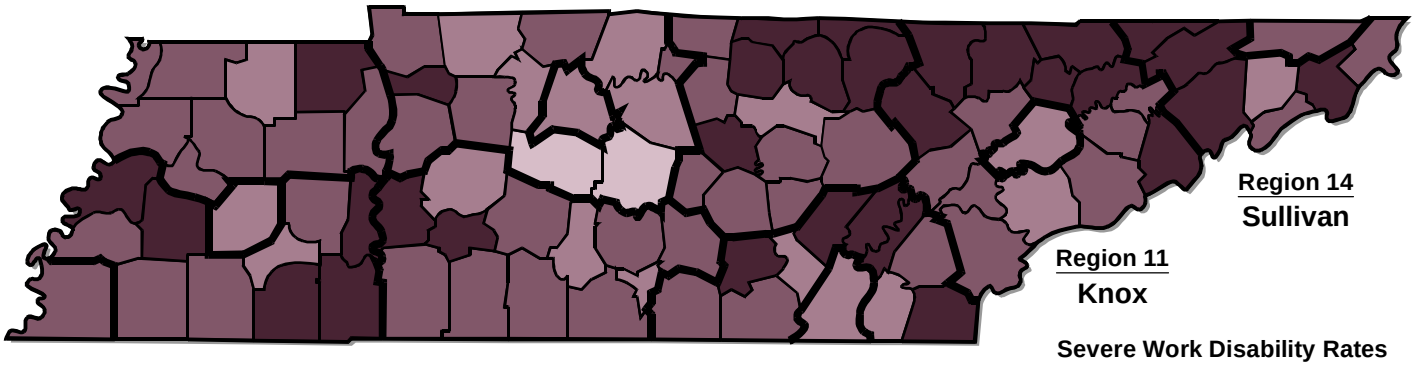
Source: 1995 BRFSS, CDC

Severe Work Disability Rates by Selected Categories, United States and Tennessee, 1993-95



Source: 1995 Behavioral Risk Factor Surveillance System, CDC

THE SEVERE WORK DISABILITY RATE BY COUNTY, TENNESSEE, ADULTS AGES 18-64, COMBINED ESTIMATES 1995 AND 1996



Source: BRFSS, 1995-1996.

Statewide Rate (1995) = 7.0%

ADULT HEALTH STATUS IN TENNESSEE, BRFSS, 1997[7]

Health Status and Morbidity among Tennessee Adults

General Health Status

- Overall, 18% of Tennessee adults described their general health status as fair or poor in 1997. Females were more likely than males to perceive their health as being fair or poor (21% versus 15%, respectively), and nonwhites were more likely than whites to perceive their health this way (20% versus 18%, respectively).

- Twenty-one percent of Tennesseans perceived their general health as excellent; 32% perceived their health as very good; and 29% perceived their health as good. Males were more likely than females to perceive their health as being excellent (23% versus 18%) or very good (33% versus 30.5%), and were about as likely as females to perceive their health as good (29% versus 30%).

Diabetes

- Diabetes was reported by approximately 4% of Tennesseans in 1997. Diabetes was reported by 5.2% of females versus 3.4% of males, and by 5% of nonwhites versus 4.2% of whites. Nonwhite females had the highest reported prevalence of diabetes (6.5%).

Hypertension

- Twenty-eight percent of adult Tennesseans who have ever had their blood pressure taken reported having been told their blood pressure was high. More females (31%) reported that they had been told their blood pressure was high than males (25%). Nonwhites were also more likely to have been told their blood pressure was high compared to whites (30% and 27%, respectively). Persons 65 years of age and older had the highest prevalence of high blood pressure (53%).

- Hypertension prevalence decreased with increasing income. Persons with annual incomes below $15,000 had a much higher prevalence of hypertension (40%-44%) than those with annual incomes between $15,000 and $34,999 (25%-34%). Persons with annual incomes equal to or greater than $35,000 had a prevalence of hypertension between 15% and 22%.

---

[7]The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing statewide telephone-based surveillance system designed by the Centers for Disease Control and Prevention (CDC). The BRFSS monitors a variety of health behaviors and practices contributing to leading causes of morbidity and mortality. Data from Tennessee's BRFSS sample are useful for planning, initiating, and supporting health promotion and disease prevention programs. Results from the BRFSS are also useful in monitoring Tennessee's progress toward achieving state health objectives. These results are weighted.

Oral Health

- Forty-seven percent of Tennessee adults reported that they had no dental insurance coverage.

- Slightly over 1% of adult Tennesseans reported that they had never visited a dentist or dental clinic, while another 15% reported that they had not been to a dentist in the past 5 years. Another 5% reported an interval of between 2 and 5 years since they had visited a dentist, and 11% reported between 1 and 2 years. Of persons who had not visited a dentist or dental clinic in the past 12 months, 18% reported that their main reason for not visiting a dentist was the cost.

Health Access

- Twelve percent of adult Tennesseans reported that they had no health insurance in 1997. Males were more likely than females to lack health insurance (14% versus 10%, respectively). Nonwhites (14%) were more likely to lack health insurance than whites (11%). Persons with the highest prevalence of no insurance were 18-24 and 25-34 years of age (18.5% and 17%, respectively).

- Eleven percent of employed Tennesseans lacked health insurance. Thirty-three percent of persons out of work less than one year, and 32% of persons out of work for one year or more reported having no health insurance. Twenty-two percent of self-employed residents and 19.5% of students had no health insurance.

- Of those persons without health insurance coverage, 8% had never had health insurance, while another 26% had not had health insurance for 5 or more years. Fourteen percent had not had health insurance in the past 2-5 years; 11% had not had health insurance in the past 1-2 years; and 38% had been without health insurance for 1 year or less.

Utilization of Preventive Services

Flu Immunization

- Sixty-nine percent of Tennessee adults ages 65 and older reported that they had received a flu shot within the past 12 months. Males were just as likely as females to have received a flu shot (69% each), while whites were much more likely than nonwhites to have received a flu shot (72% versus 48.5%, respectively).

Pneumonia Vaccination

- Forty-five percent of Tennesseans ages 65 and older reported that they had received a pneumonia vaccination in their lifetimes. Again, males and females

were equally likely to have received a pneumonia vaccination (45% each), while whites were more likely than nonwhites to have received a pneumonia vaccination (47% versus 33.5%, respectively).

Mammograms and Clinical Breast Examinations

- Seventy-three percent of females ages 40 and older reported ever having had a mammogram and clinical breast examination. White females in this age-group were more likely than nonwhite females to report these examinations (75% versus 63%, respectively).

- Among females ages 40 and older, higher educational level was associated with higher prevalence of receipt of mammograms and clinical breast examinations. College graduates were much more likely to have undergone these examinations (85%) than those who had never attended school, attended only elementary school, or did not complete high school (57%, 55%, and 65%, respectively).

Injury Control

Adult Use of Safety Belts

- Overall, 66% of Tennessee adults reported that they always use a safety belt when they drive or ride in a vehicle. Thirteen percent of adults reported that they nearly always wear a safety belt; 11% sometimes wear one; and 10% seldom or never wear one.

- Males were less likely to always use a safety belt than females (40% compared to 28%, respectively). Nonwhites were less likely to always use a safety belt than whites, (39% compared to 32%, respectively).

Child Safety

- Thirty-four percent of respondents had at least one child in their household. Of those persons, 70% had children between 5 and 15 years old at the time of the survey, and 22% had children 4 years of age and under.

- Of those persons with children aged 5 through 15 years, 19% reported that their oldest child did not always use a safety belt when riding in a vehicle. Of those Tennessee adults with children 4 years old and younger, 3% reported that their oldest child did not always use a car safety seat when riding in a vehicle.

- Less than 1 in 3 of persons (29%) with children 5 through 15 years of age reported that their oldest child always used a bicycle helmet when riding on a bicycle. Forty-three percent reported that their oldest child seldom or never wore a bicycle helmet. Females were more likely than males to report that their child always used a bicycle

helmet (32% versus 26%, respectively). College graduates were much more likely to report that their child always used a bicycle helmet (39%) than high school graduates (28%) or those with some high school (20%).

Smoke Detectors

- Nine percent of Tennessee adults reported that the smoke detectors in their home had never been tested. Another 3% reported that it had been one or more years since their smoke detectors were tested.

- Those with annual incomes below $20,000 were more likely to report that their smoke detectors had never been tested (11%-18%) than those with annual incomes of $20,000 or more (6%-9%). Adults in the 18-24, 25-34, and 65 and over age-groups were more likely to have never tested their smoke detectors than adults in other age-groups (12%, 10%, and 10%, respectively).

Risk Factors for Disease and Injury

Overweight

- Based on body mass index, 32% of Tennesseans were overweight at the time of the 1997 BRFSS. Males were similarly likely to be overweight as females (32% versus 31%). Results indicate that nonwhites were more likely to be overweight than whites (40% versus 30%). Nonwhite females were the race-gender group with the highest overweight prevalence (43.5%), while the race-gender group with the lowest overweight prevalence was white females (28%).

Smoking

- Current smokers were defined as persons who reported ever smoking 100 cigarettes and who smoke now, either every day or some days. Current smokers represented 27% of adults -- 28% of males and 26% of females; 28% of whites and 21% of nonwhites. Twenty-four percent of adults smoked every day, and 3% smoked on some days. The race-gender group with the lowest smoking prevalence was nonwhite females (17%).

- Current smoking was reported by 31%-32% of those between 18 and 54 years of age. Beyond age 54, current smoking prevalence decreased, with current smoking reported by 22%, 17%, and 7% of those 55-64, 65-74, and 75 or more years of age, respectively.

- Current smoking prevalence decreased with annual income. Between 34% and 35% of those with annual incomes less than $15,000 reported current smoking. The prevalence of current smoking among persons with annual incomes between $15,000 and $24,999 was between 35% and 38%, while the prevalence of current

smoking among persons with annual incomes between $25,000 and $34,999 was 29%. The prevalence range of those with incomes of $35,000 and up was 16%-23%.

Binge Drinking of Alcoholic Beverages

- Binge drinking was defined as drinking five or more drinks on at least one occasion during the past month. The overall prevalence of binge drinking among Tennessee adults was 7%, with 11% of males and 3% of females reporting binge drinking. Whites were more likely to binge-drink than nonwhites (8% versus 5%, respectively). At 12%, white males were more likely to binge-drink than other race-gender groups, and nonwhite females were least likely to binge-drink (2%).

- The two age-groups with the highest prevalence of binge drinking were 18-24 year-olds (15%) and 25-34 year-olds (13%). With a prevalence of 17%, students were more likely to binge-drink than adults who were employed, unemployed, or retired.

Chronic Drinking of Alcoholic Beverages

- Approximately 2% of Tennessee adults reported chronic drinking (i.e., drinking 60 or more drinks during the past month). Males were more likely to report this than females (3.5% versus 0.3%). Chronic drinking among nonwhites and whites was similar, at 2% prevalence each.

- The prevalence of chronic drinking among those between 18 and 54 years of age was approximately 2%. Chronic drinking among those 55 years of age and older was less than 1%.

Drinking and Driving

- One percent of Tennessee's adult population reported driving after having too much to drink, one or more times during past month. Males (2%) were more likely to do this than females (0.3%), while the prevalence of drinking and driving among nonwhites and whites was very similar (1% each).

- Adults in the 25-34 year age-group were most likely to drink and drive (3%).

Sedentary Lifestyle

- A sedentary lifestyle was defined as less than 20 minutes of leisure-time physical activity per session and/or less than three times per week of leisure-time physical activity during the past month. Fifty-eight percent of Tennesseans reported having a sedentary lifestyle. Only a slight difference was observed between males and females (60% versus 57%, respectively).

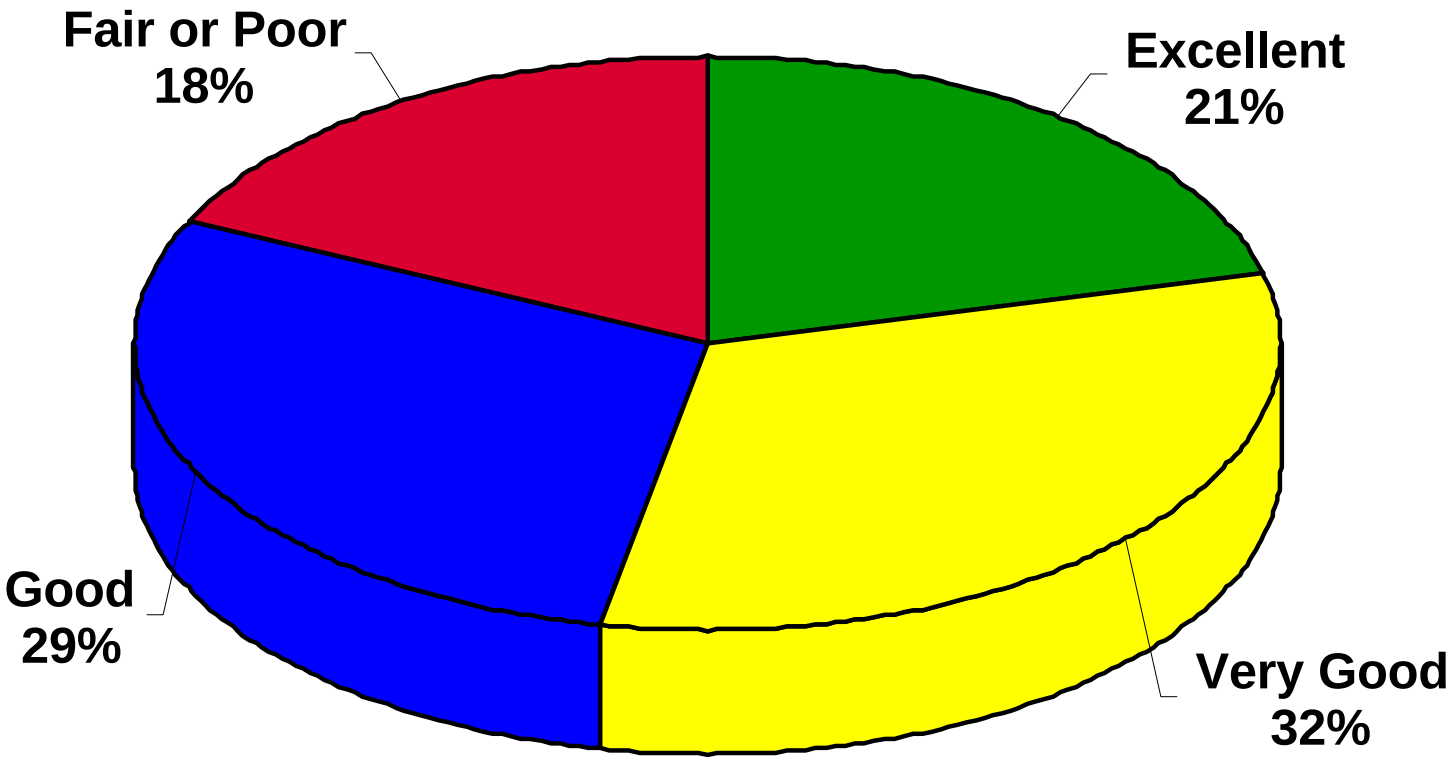
- Percentages of adults with sedentary lifestyles rose from 42% among 18-24 year-olds to 57%, 60%, and 59%, respectively, among persons in the 25-34, 35-44, and 45-54 year age-groups. The highest sedentary lifestyle prevalence was among the 55-64 year age-group (69%), and persons 75 years of age and older (65%). The 65-74 year age-group had a sedentary lifestyle prevalence of 56%.

- Low income was associated with sedentary lifestyles. Seventy-five percent of persons with annual incomes of less than $10,000, and 62% of persons with incomes between $10,000 and $14,999 a year, reported sedentary lifestyles. In contrast, 54% of persons with annual incomes between $50,000 and $74,999, and 45% of those with incomes of $75,000 or more a year, reported sedentary lifestyles.

- Lower educational attainment was also associated with a sedentary lifestyle. Fifty-one percent of adults with some college or technical school, and 46% of college graduates, reported sedentary lifestyles. In contrast, 77.5% of those with elementary school educations; 71% of those with some high school; and 64% of high school graduates reported sedentary lifestyles.

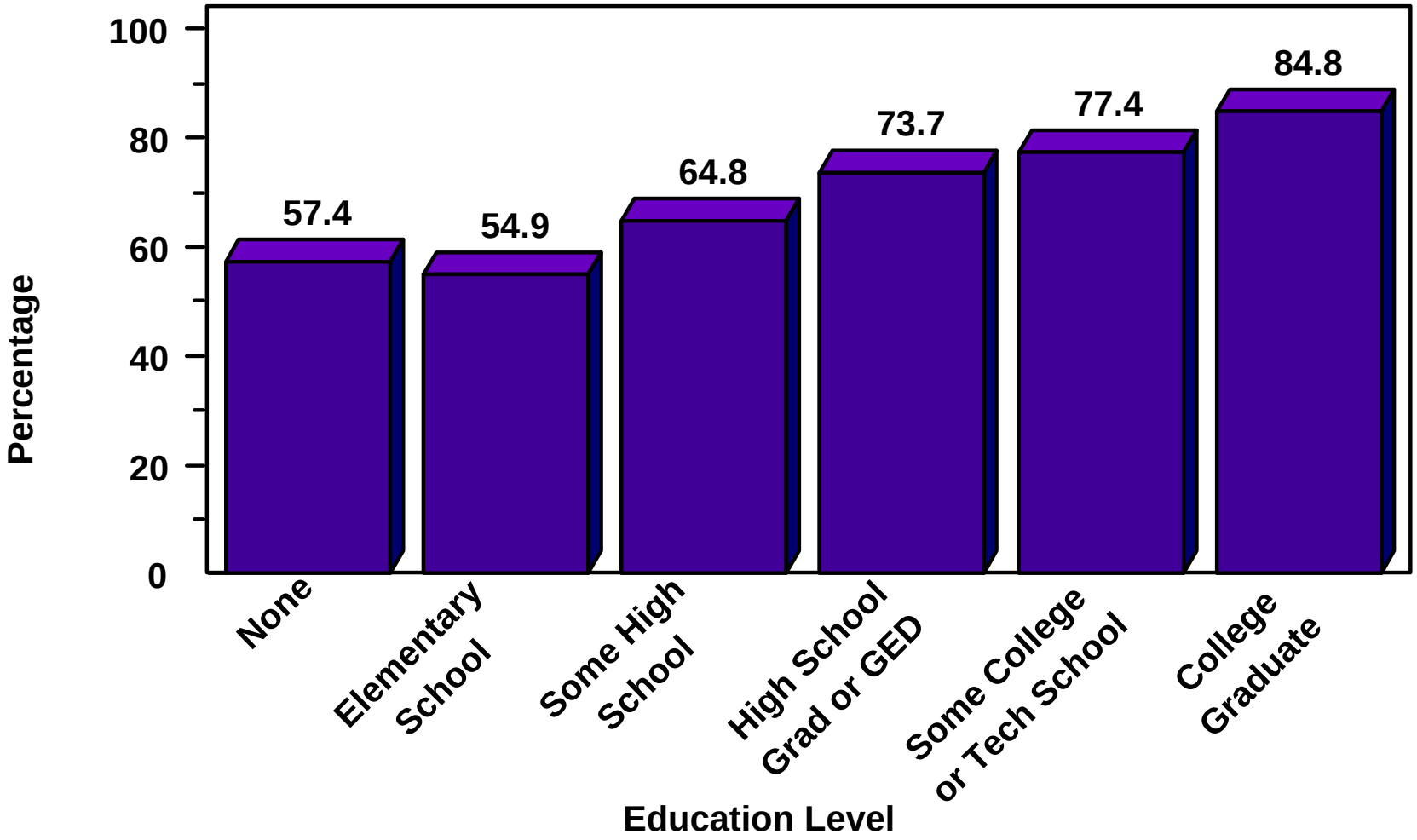
Source: 1997 Tennessee BRFSS. TDH and CDC Division of Policy and Planning, 1998.

General Health Status of Tennessee Adults, as Reported in the 1997 BRFSS



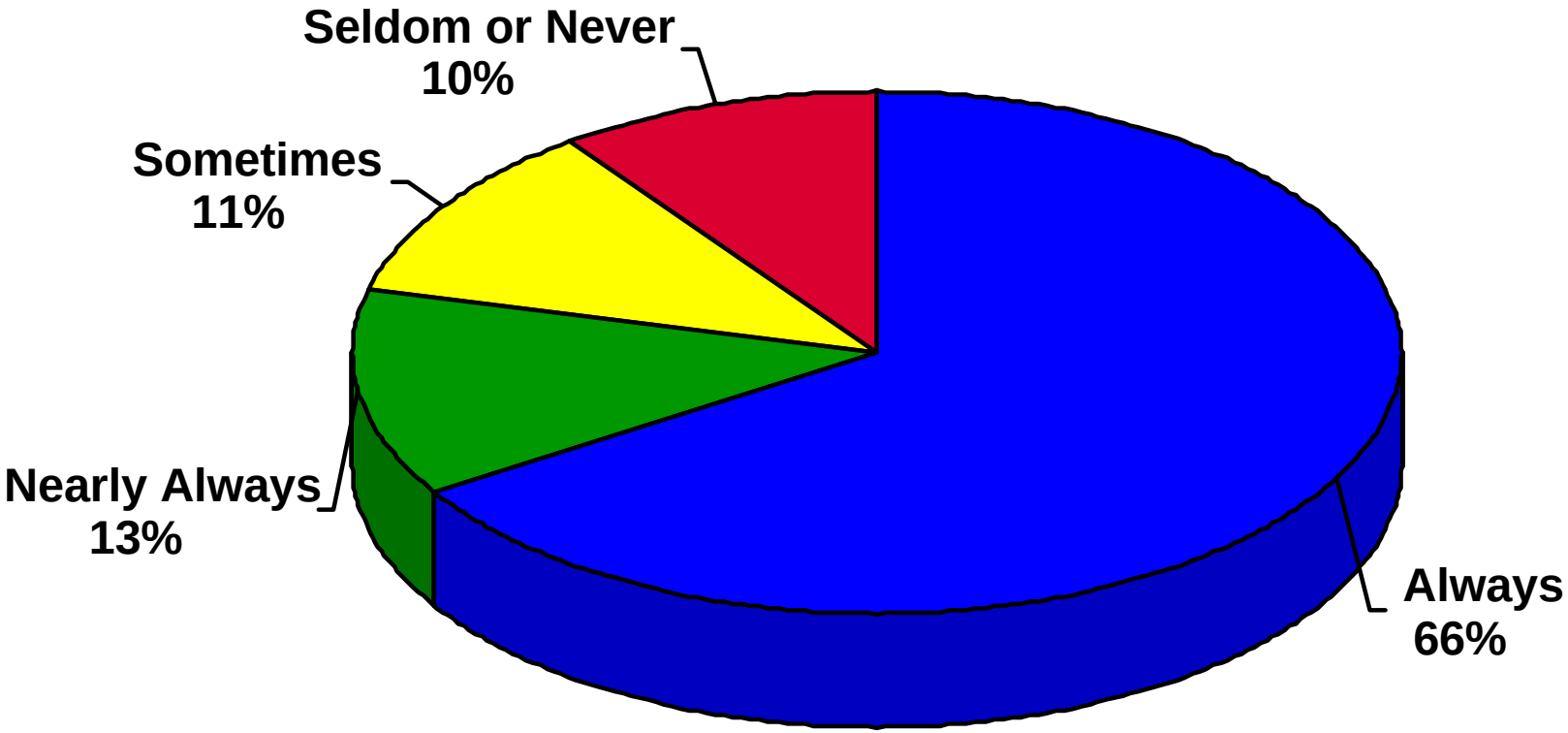
Source: Tennessee BRFSS, TDH, 1997.

Percentage of Tennessee Females Aged 40 and Older Who Have Ever Had a Mammogram and Breast Exam, by Education Level, BRFSS, 1997



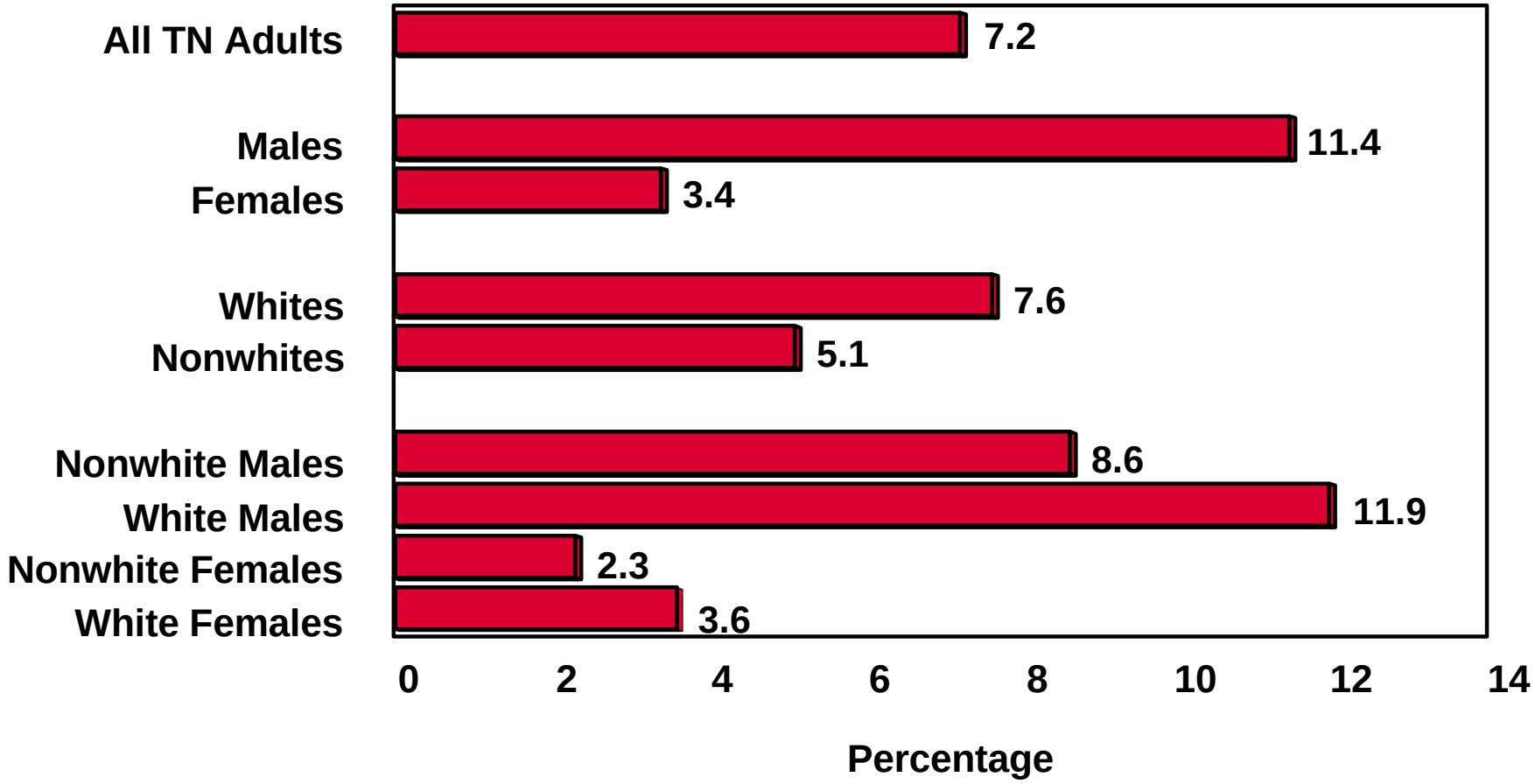
Source: Tennessee BRFSS, TDH, 1997.

Reported Frequency of Safety Belt Use among Tennessee Adults, BRFSS, 1997



Source: Tennessee BRFSS, TDH, 1997.

Prevalence of Binge Drinking among Tennessee Adults, by Gender, Race, and Race-Gender Group, BRFSS, 1997



Source: Tennessee BRFSS, TDH, 1997.

TENNESSEE'S PROGRESS TOWARD SELECTED U.S. HEALTHY PEOPLE 2000 OBJECTIVES[8]

The Healthy People 2000 Objectives, established by the United States Department of Health and Human Services, have been set up as a national model of standards to help states achieve improved health status by the year 2000. Healthy People 2000 indicators relating to mortality, teenage pregnancy and births, adult behavioral risk factors, and other topic areas are examined to assess Tennessee's progress toward meeting these national objectives.

MORTALITY

- ***REDUCE CORONARY HEART DISEASE MORTALITY***
  (Healthy People 2000 Objectives 1.1, 1.1a)
  1997 TN: 123.5 per 100,000 for Tennessee.
  U.S. Target: 100.0 per 100,000 for the U.S.
  Status: Tennessee's rate is 24% higher than the national target established by Healthy People 2000

  1997 TN: 170.7 per 100,000 for Tennessee blacks.
  U.S. Target: 115.0 per 100,000 for U.S. blacks.
  Status: Tennessee's rate is 48% higher than the national target established by Healthy People 2000

- ***REDUCE CANCER MORTALITY***
  (Healthy People 2000 Objectives 2.2, 2.2a)
  1997 TN: 137.2 per 100,000 for Tennessee.
  U.S. Target: 130.0 per 100,000 for the U.S.
  Status: Tennessee's rate is 6% higher than the national target established by Healthy People 2000.

  1997 TN: 190.8 per 100,000 for Tennessee blacks.
  U.S. Target: 175.0 per 100,000 for U.S. blacks.
  Status: Tennessee's rate is 9% higher than the national target established by Healthy People 2000.

[8]**Source of U.S. Goals:** Healthy People 2000: Healthy People 2000 Review, 1997. National Center for Health Statistics, Hyattsville, MD: 1997. **Source of TN's State Goals:** Tennessee's Healthy People 2000. Tennessee Department of Health, Health Statistics and Information, Nashville, TN: 1996.

- ***REDUCE STROKE MORTALITY***

  (Healthy People 2000 Objectives 2.22, 2.22a)
  1997 TN: 33.3 per 100,000 for Tennessee.
  U.S. Target: 20.0 per 100,000 for the U.S.
  Status: Tennessee's rate is 67% higher than the national target established by Healthy People 2000.

  1997 TN: 61.2 per 100,000 for Tennessee blacks.
  U.S. Target: 27.0 per 100,000 for U.S. blacks.
  Status: Tennessee's rate is 127% higher than the national target established by Healthy People 2000.

- ***REDUCE LUNG CANCER MORTALITY***

  (Healthy People 2000 Objectives 3.2, 3.2a, 3.2b)
  1997 TN: 46.7 per 100,000 for Tennessee.
  U.S. Target: 42.0 per 100,000 for the U.S.
  Status: Tennessee's rate is 11% higher than the national target established by Healthy People 2000.

  1997 TN: 28.6 per 100,000 for Tennessee females.
  U.S. Target: 27.0 per 100,000 for U.S. females.
  Status: Tennessee's rate is 6% higher than the national target established by Healthy People 2000.

  1997 TN: 90.6 per 100,000 for black males in Tennessee.
  U.S. Target: 91.0 per 100,000 for black males in the U.S.
  Status: Tennessee's rate is 0.4% lower than the national target established by Healthy People 2000. **Tennessee has met this goal.**

- ***REDUCE FEMALE BREAST CANCER MORTALITY***

  (Healthy People 2000 Objectives 16.3, 16.3a)
  1997 TN: 19.6 per 100,000 for Tennessee females.
  U.S. Target: 20.6 per 100,000 for U.S. females.
  Status: Tennessee's rate is 5% lower than the national target established by Healthy People 2000. **Tennessee has exceeded this goal.**

  1997 TN: 30.4 per 100,000 for black females in Tennessee.
  U.S. Target: 25.0 per 100,000 for black females in the U.S.
  Status: Tennessee's rate is 22% higher than the national target established by Healthy People 2000.

- ***REDUCE UTERINE/CERVICAL CANCER MORTALITY***
  (Healthy People 2000 Objectives 16.4, 16.4a)
  1997 TN: 3.2 per 100,000 for Tennessee females.
  U.S. Target: 1.3 per 100,000 for U.S. females.
  Status: Tennessee's rate is 146% higher than the national target established by Healthy People 2000.

  1997 TN: 6.3 per 100,000 for black females in Tennessee.
  U.S. Target: 3.0 per 100,000 for black females in the U.S.
  Status: Tennessee's rate is 110% higher than the national target established by Healthy People 2000.

- ***REDUCE HOMICIDE***
  (Healthy People 2000 Objectives 7.1, 7.1a, 7.1c, 7.1e)
  1997 TN: 10.9 per 100,000 for Tennessee.
  U.S. Target: 7.2 per 100,000 for the U.S.
  Status: Tennessee's rate is 51% higher than the national target established by Healthy People 2000.

  1997 TN: 4.7 per 100,000 for children under age 3 in Tennessee.
  U.S. Target: 3.1 per 100,000 for children under age 3 in the U.S.
  Status: Tennessee's rate is 52% higher than the national target established by Healthy People 2000.

  1997 TN: 118.9 per 100,000 for black males aged 15-34 in Tennessee.
  U.S. Target: 72.4 per 100,000 for black males aged 15-34 in the U.S.
  Status: Tennessee's rate is 64% higher than the national target established by Healthy People 2000.

  1997 TN: 10.5 per 100,000 for black females aged 15-34 in Tennessee.
  U.S. Target: 16.0 per 100,000 for black females aged 15-34 in the U.S.
  Status: Tennessee's rate is 34% lower than the national target established by Healthy People 2000. **Tennessee has exceeded this goal.**

- ***REDUCE SUICIDE***

  (Healthy People 2000 Objectives 6.1, 6.1a, 6.1b, 6.1c)

  1997 TN: 13.0 per 100,000 for Tennessee.
  U.S. Target: 10.5 per 100,000 for the U.S.
  Status: Tennessee's rate is 24% higher than the national target established by Healthy People 2000.

  1997 TN: 11.4 per 100,000 for youth aged 15-19 in Tennessee.
  U.S. Target: 8.2 per 100,000 for youth aged 15-19 in the U.S.
  Status: Tennessee's rate is 39% higher than the national target established by Healthy People 2000.

  1997 TN: 26.4 per 100,000 for males aged 20-34 in Tennessee.
  U.S. Target: 21.4 per 100,000 for males aged 20-34 in the U.S.
  Status: Tennessee's rate is 23% higher than the national target established by Healthy People 2000.

  1997 TN: 42.1 per 100,000 for white males aged 65 and older in Tennessee.
  U.S. Target: 39.2 per 100,000 for white males aged 65 and older in the U.S.
  Status: Tennessee's rate is 7% higher than the national target established by Healthy People 2000.

- ***REDUCE MORTALITY FROM UNINTENTIONAL INJURIES***

  (Healthy People 2000 Objectives 9.1, 9.1b, 9.1c)

  1997 TN: 39.4 per 100,000 for Tennessee.
  U.S. Target: 29.3 per 100,000 for the U.S.
  Status: Tennessee's rate is 35% higher than the national target established by Healthy People 2000.

  1997 TN: 77.0 per 100,000 for black males in Tennessee.
  U.S. Target: 51.9 per 100,000 for black males in the U.S.
  Status: Tennessee's rate is 48% higher than the national target established by Healthy People 2000.

  1997 TN: 55.5 per 100,000 for white males in Tennessee .
  U.S. Target: 42.9 per 100,000 for white males in the U.S.
  Status: Tennessee's rate is 29% higher than the national target established by Healthy People 2000.

- ***REDUCE CANCER OF THE ORAL CAVITY AND PHARYNX***

(Healthy People 2000 Objectives 3.17, 3.17a, 3.17b)

1997 TN: 12.3 per 100,000 for males aged 45-74 in Tennessee.
U.S. Target: 10.5 per 100,000 for males aged 45-74 in the U.S.
Status: Tennessee's rate is 17% higher than the national target established by Healthy People 2000.

1997 TN: 3.7 per 100,000 for females aged 45-74 in Tennessee.
U.S. Target: 4.1 per 100,000 for females aged 45-74 in the U.S.
Status: Tennessee's rate is 10% lower than the national target established by Healthy People 2000. **Tennessee has exceeded this goal.**

1997 TN: 31.9 per 100,000 for black males aged 45-74 in Tennessee.
U.S. Target: 26.0 per 100,000 for black males aged 45-74 in the U.S.
Status: Tennessee's rate is 23% higher than the national target established by Healthy People 2000.

1997 TN: 5.6 per 100,000 for black females aged 45-74 in Tennessee.
U.S. Target: 6.9 per 100,000 for black females aged 45-74 in the U.S.
Status: Tennessee's rate is 19% lower than the national target established by Healthy People 2000. **Tennessee has exceeded this goal.**

- ***REDUCE CIRRHOSIS MORTALITY***

(Healthy People 2000 Objectives 4.2, 4.2a)

1997 TN: 8.3 per 100,000 for Tennessee.
U.S. Target: 6.0 per 100,000 for the U.S.
Status: Tennessee's rate is 38% higher than the national target established by Healthy People 2000.

1997 TN: 14.8 per 100,000 for black males in Tennessee.
U.S. Target: 12.0 per 100,000 for black males in the U.S.
Status: Tennessee's rate is 23% higher than the national target established by Healthy People 2000.

- ***REDUCE CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) MORTALITY***

(Healthy People 2000 Objective 3.3)

1997 TN: 24.7 per 100,000 for Tennessee.
U.S. Target: 25.0 per 100,000 for the U.S.
Status: Tennessee's rate is 1% lower than the national target established by Healthy People 2000. **Tennessee has met this goal.**

- ***REDUCE INFANT MORTALITY***

  (Healthy People 2000 Objectives 14.1, 14.1a)

  1997 TN: 8.5 per 1,000 live births for Tennessee.
  U.S. Target: 7.0 per 1,000 live births for the U.S.
  Status: Tennessee's rate is 21% higher than the national target established by Healthy People 2000.

  1997 TN: 16.3 per 1,000 live births for Tennessee blacks.
  U.S. Target: 11.0 per 1,000 live births for U.S. blacks.
  Status: Tennessee's rate is 48% higher than the national target established by Healthy People 2000.

- ***REDUCE NEONATAL MORTALITY***

  (Healthy People 2000 Objectives 14.1d, 14.1e)

  1997 TN: 5.1 per 1,000 live births for Tennessee.
  U.S. Target: 4.5 per 1,000 live births for the U.S.
  Status: Tennessee's rate is 13% higher than the national target established by Healthy People 2000.

  1997 TN: 9.8 per 1,000 live births for Tennessee blacks
  U.S. Target: 7.0 per 1,000 live births for U.S. blacks
  Status: Tennessee's rate is 40% higher than the national target established by Healthy People 2000.

- ***REDUCE POSTNEONATAL MORTALITY***

  (Healthy People 2000 Objectives 14.1g, 14.1h)

  1997 TN: 3.4 per 1,000 live births for Tennessee.
  U.S. Target: 2.5 per 1,00 live births for the U.S.
  Status: Tennessee's rate is 36% higher than the national target established by Healthy People 2000.

  1997 TN: 6.5 per 1,000 live births for Tennessee blacks.
  U.S. Target: 4.0 per 1,000 live births for U.S. blacks.
  Status: Tennessee's rate is 63% higher than the national target established by Healthy People 2000.

Note: Mortality objectives and Tennessee rates that are not age-specific are age-adjusted to the 1940 population.
Source: Tennessee Department of Health and Health Information Tennessee Web site **(server.to/hit)**, CHRG-TDH 1999.

TEENAGE PREGNANCY AND BIRTHS

- ***REDUCE TEENAGE PREGNANCY***

  (Healthy People 2000 Objectives 5.1, 5.1a)
  1997 TN: 50.2 per 1,000 females aged 15-17 in Tennessee.
  U.S. Target: 50.0 per 1,000 females aged 15-17 in the U.S.
  Status: Tennessee's rate is 0.4% higher than the national target established by Healthy People 2000. **Tennessee has met this goal.**

  1997 TN: 143.4 per 1,000 black females aged 15-19 in Tennessee.
  U.S. Target: 120.0 per 1,000 black females aged 15-19 in the U.S.
  Status: Tennessee's rate is 20% higher than the national target established by Healthy People 2000.

  Tennessee established a set of state goals for the year 2000, which included reducing pregnancy among females aged 14 and younger to no more than 2.5 per 1,000 and reducing pregnancy among females aged 15 to 17 to no more than 55 per 1,000. **Tennessee has met both of these goals.** The pregnancy rate for females aged 10 to 14 was 2.2 per 1,000 in 1997. The pregnancy rate for females aged 15 to 17 was 50.2 per 1,000 in 1997.

- ***REDUCE LOW BIRTHWEIGHT***

  (Healthy People 2000 Objectives 14.5, 14.5a)
  1997 TN: 8.8% of live births in Tennessee.
  U.S. Target: 5.0% of live births in the U.S.
  Status: Tennessee's rate is 76% higher than the national target established by Healthy People 2000.

  1997 TN: 14.0% of live births by black pregnant females in Tennessee
  U.S. Target: 9.0% of live births by black pregnant females in the U.S.
  Status: Tennessee's rate is 56% higher than the national target established by Healthy People 2000.

  Tennessee's 2000 state goal was to reduce the percent of low birthweight babies to 7.1% of live births. Tennessee's low birth weight rate of 8.8% for 1997 is 24% higher than the state goal.

- ***REDUCE CESAREAN SECTION DELIVERY RATE***

  (Healthy People 2000 Objective 14.8)
  1997 TN: 22.0 per 100 deliveries in Tennessee.
  U.S. Target: 15.0 per 100 deliveries in the U.S.
  Status: Tennessee's rate is 47% higher than the national target established by Healthy People 2000.

- ***INCREASE PRENATAL CARE***
  (Healthy People 2000 Objective 14.11)
  1997 TN: 83.7% of births in Tennessee were to mothers who had received prenatal care in the first trimester of pregnancy
  U.S. Target: 90.0% of births in the U.S.
  Status: Tennessee's rate is 7% lower than the national target established by Healthy People 2000.

Source: **National Vital Statistics Report**, CDC, National Center for Health Statistics, 1998:47(4).

ADULT BEHAVIORAL RISK FACTORS

- ***REDUCE PREVALENCE OF CIGARETTE SMOKING***
  (Healthy People 2000 Objectives 3.4, 3.4d)
  1997 TN: 27% prevalence among adults aged 18 and older in Tennessee.
  U.S. Target: 15% prevalence among adults aged 18 and older in the U.S.
  Status: Tennessee's rate is 80% higher than the national target established by Healthy People 2000. The median prevalence of cigarette smoking in all 50 states, the District of Columbia and Puerto Rico is 23.2%.

  1997 TN: 20% among blacks aged 18 and older in Tennessee
  U.S. Target: 18% among blacks aged 18 and older in the U.S.
  Status: Tennessee's rate is 11% higher than the national target established by Healthy People 2000.

- ***INCREASE INFLUENZA IMMUNIZATION***
  (Healthy People 2000 Objective 20.11)
  1997 TN: 69% of noninstitutionalized adults aged 65 and over received a flu shot during the previous 12 months in Tennessee.
  U.S. Target: 60% prevalence of immunization for noninstitutionalized adults aged 65 and over for the U.S.
  Status: Tennessee's rate is 15% higher than the national target established by Healthy People 2000. The median percentage of noninstitutionalized adults aged 65 and over who received a flu shot during the previous 12 months is 65.9%. This includes all 50 states, the District of Columbia and Puerto Rico. **Tennessee has exceeded this goal.**

- ***INCREASE PNEUMONIA IMMUNIZATION***

  (Healthy People 2000 Objective 20.11)

  1997 TN: 45% of noninstitutionalized adults aged 65 and over received a pneumonia vaccination in Tennessee.

  U.S. Target: 60% prevalence of immunization for noninstitutionalized adults aged 65 and over for the U.S.

  Status: Tennessee's rate is 25% lower than the national target established by Healthy People 2000. The median percentage of noninstitutionalized adults aged 65 and over who have received a pneumonia vaccination is 45.8%, including all 50 states, the District of Columbia and Puerto Rico.

- ***INCREASE CHOLESTEROL CHECKING***

  (Healthy People 2000 Objective 15.14)

  1997 TN: 70% of adults had their blood cholesterol checked within the past 5 years in Tennessee.

  U.S. Target: 75% of adults to have their blood cholesterol checked within the past 5 years for the U.S.

  Status: Tennessee's rate is 6% lower than the national target established by Healthy People 2000. The median percentage of adults to have their blood cholesterol checked within the past 5 years, including all 50 states, the District of Columbia and Puerto Rico, is 69.1%.

- ***INCREASE CLINICAL BREAST EXAMS AND MAMMOGRAMS***

  (Healthy People 2000 Objectives 16.11, 16.11d)

  1997 TN: 68% of females aged 50 and older had received a clinical breast exam and mammogram within the past two years in Tennessee.

  U.S. Target: 60% of females aged 50 and older to receive a clinical breast exam and mammogram within the past two years for the U.S.

  Status: Tennessee's rate is 13% higher than the national target established by Healthy People 2000. The median percentage of females aged 50 and older who have received a clinical breast exam and a mammogram within the past two years, including 49 states (California excluded), the District of Columbia and Puerto Rico, is 66.4%. **Tennessee has exceeded this goal.**

  1997 TN: 53% of females aged 70 and older had received a clinical breast exam and mammogram within the past two years in Tennessee.

  U.S. Target: 60% of females aged 70 and older to receive a clinical breast exam and mammogram within the past two years for the U.S.

  Status: Tennessee's rate is 12% lower than the national target established by Healthy People 2000.

- ***INCREASE PAP SMEAR TESTS***

  (Healthy People 2000 Objective 16.12)

  1997 TN: 95% of females aged 18 and older have received a Pap Smear test in Tennessee.

  U.S. Target: 95% of females aged 18 and older who have ever received a Pap Smear test for the U.S.

  Status: Tennessee's rate matches the national target established by Healthy People 2000. The median percentage of females aged 18 and older who have ever received a Pap Smear test (including 49 states (California excluded), the District of Columbia and Puerto Rico) is 94.7%. **Tennessee has met this goal.**

- ***INCREASE SIGMOIDOSCOPY EXAMS***

  (Healthy People 2000 Objective 16.13)

  1997 TN: 34% adults aged 50 and older have received a sigmoidoscopy exam in Tennessee.

  U.S. Target: 40% adults aged 50 and older to have receive a sigmoidoscopy exam for the U.S.

  Status: Tennessee's rate is 15% lower than the national target established by Healthy People 2000. The median percentage of adults aged 50 and older who have received a sigmoidoscopy exam, including all 50 states, the District of Columbia and Puerto Rico, is 40.8%.

- ***INCREASE FECAL OCCULT BLOOD STOOL TESTING***

  (Healthy People 2000 Objective 16.13)

  1997 TN: 22% of adults aged 50 and older received blood stool testing within last two years in Tennessee.

  U.S. Target: 50% of adults aged 50 and older to receive blood stool testing within last two years for U.S.

  Status: Tennessee's rate is 56% lower than the national target established by Healthy People 2000. The median percentage of adults aged 50 and older who have received blood stool testing, including all 50 states, the District of Columbia and Puerto Rico, is 26%.

- ***INCREASE VIGOROUS PHYSICAL ACTIVITY***

  Leisure-time physical activity for 20 minutes or more, 3 or more times/week, at 50% or more capacity

  (Healthy People 2000 Objective 1.4)

  1997 TN: 13% of adults aged 18 and older in Tennessee.

  U.S. Target: 20% of adults aged 18 and older for the U.S.

  Status: Tennessee's rate is 35% lower than the national target established by Healthy People 2000.

- ***REDUCE PHYSICAL INACTIVITY (NO LEISURE-TIME PHYSICAL ACTIVITY)***
  (Healthy People 2000 Objectives 1.5, 1.5a, 1.5d)

  1997 TN: 37% of adults aged 65 and older in Tennessee.
  U.S. Target: 22% of adults aged 65 and older for the U.S.
  Status: Tennessee's rate is 68% higher than the national target established by Healthy People 2000.

  1997 TN: 41% of black adults aged 18 and older in Tennessee.
  U.S. Target: 20% of black adults aged 18 and older in the U.S.
  Status: Tennessee's rate is 105% higher than the national target established by Healthy People 2000.

Note: Adult Behavioral Risk Factor data is **weighted**.
Sources: 1997 Behavioral Risk Factor Surveillance System (BRFSS) Summary Prevalence Report (CDC) and 1997 BRFSS data, TDH.

YOUTH BEHAVIORAL RISK FACTORS

- ***REDUCE HEAVY DRINKING***
  (Healthy People 2000 Objective 4.7)
  1997 TN: 38% among Tennessee high school seniors.
  U.S. Target: 28% among high school seniors in the U.S.
  Status: The rate for Tennessee seniors is 36% higher than the national target established by Healthy People 2000.

- ***INCREASE VIGOROUS PHYSICAL ACTIVITY***
  (Healthy People 2000 Objective 1.4)
  1997 TN: 59% among Tennessee students in grades 9-12.
  U.S. Target: 75% among individuals in grades 9-12 in the U.S.
  Status: The rate for Tennessee students is 21% lower than the national target established by Healthy People 2000.

Note: Youth Risk Behavior Survey data is **unweighted** and, therefore, cannot be generalized to other high school students within Tennessee. Comparisons to Healthy People 2000 objectives are reflective of only those students who participated in the survey.
Source: 1997 Tennessee State Department of Education Youth Risk Behavior Survey Results.

COMMUNICABLE DISEASES

- ***REDUCE TUBERCULOSIS***
  1997 TN: 8.7 per 100,000.
  U.S. Target: 3.5 per 100,000.
  Status: Tennessee's rate is 149% higher than the national target.

While not meeting the national target, **Tennessee met its state goal** to reduce the rate of tuberculosis to no more than 9.5 cases per 100,000.

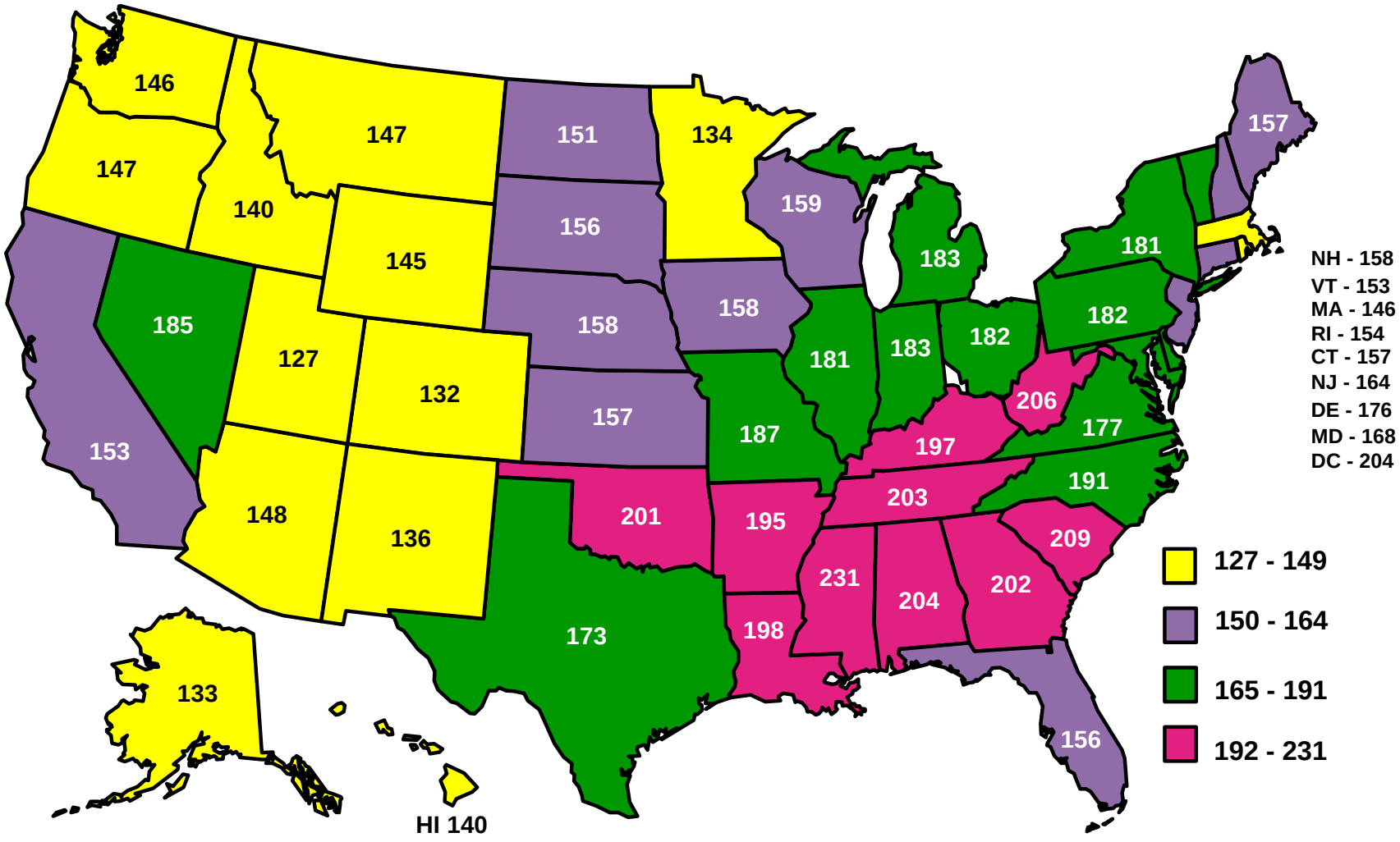
- ***REDUCE GONORRHEA***
  (Healthy People 2000 Objective 19.1)
  1997 TN: 205.2 per 100,000 for Tennessee.
  U.S. Target: 100.0 per 100,000 for the U.S.
  Status: Tennessee's rate is 105% higher than the national target for 2000.

- ***REDUCE PRIMARY AND SECONDARY SYPHILIS***
  (Healthy People 2000 Objective 19.3)
  1997 TN: 13.9 per 100,000 for Tennessee.
  U.S. Target: 4.0 per 100,000 for the U.S.
  Status: Tennessee's rate is 248% higher than the national target for 2000.

While not meeting the national target, **Tennessee met its state goal** to reduce the reported incidence of syphilis to no more cases than 24 per 100,000.

Source: TDH, Communicable and Environmental Disease Services, May 1999.

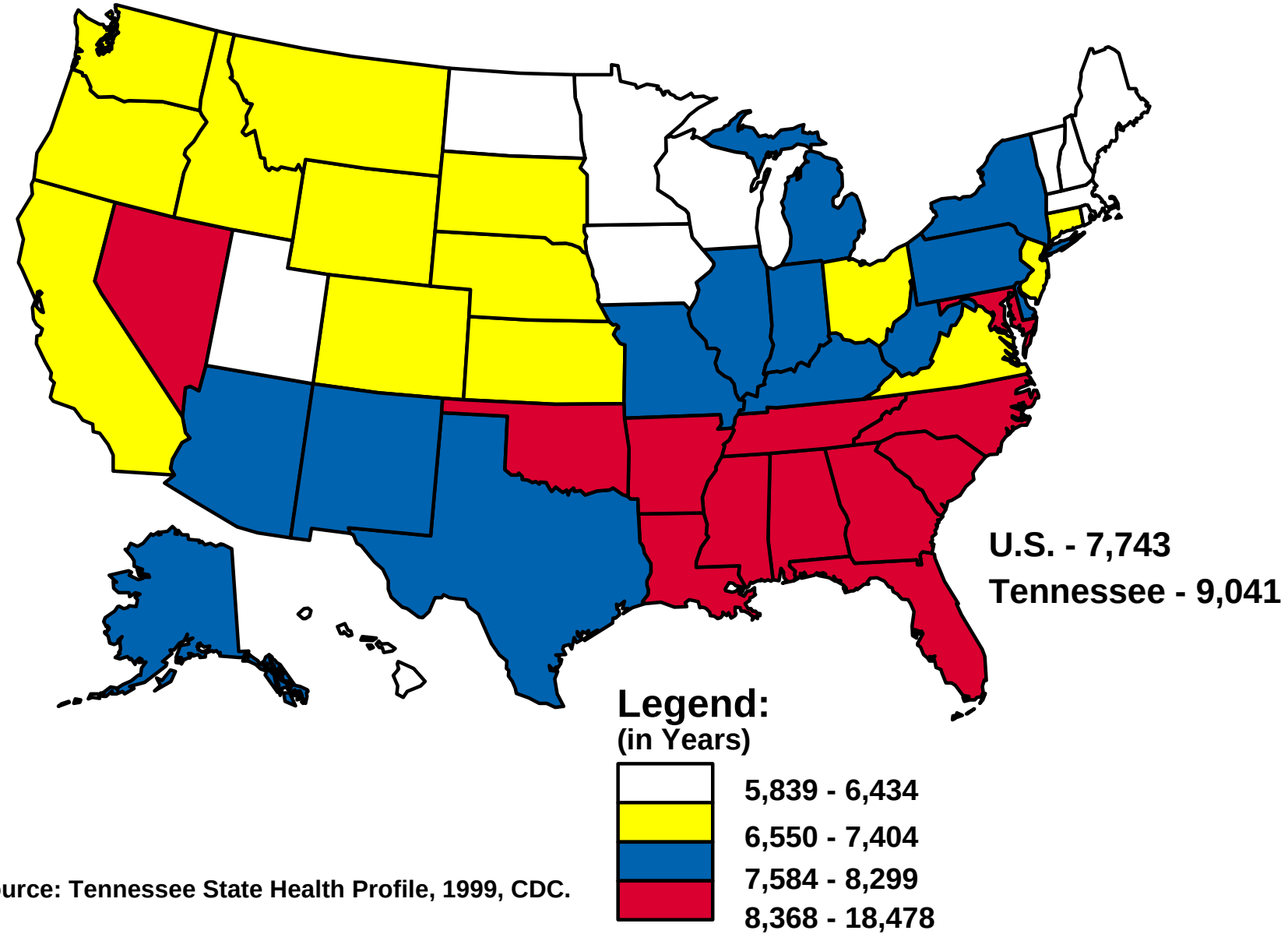
Age-Adjusted Death Rates (per 100,000 Population) from Total Cardiovascular Disease, 1996



Tennessee - 203; United States - 172

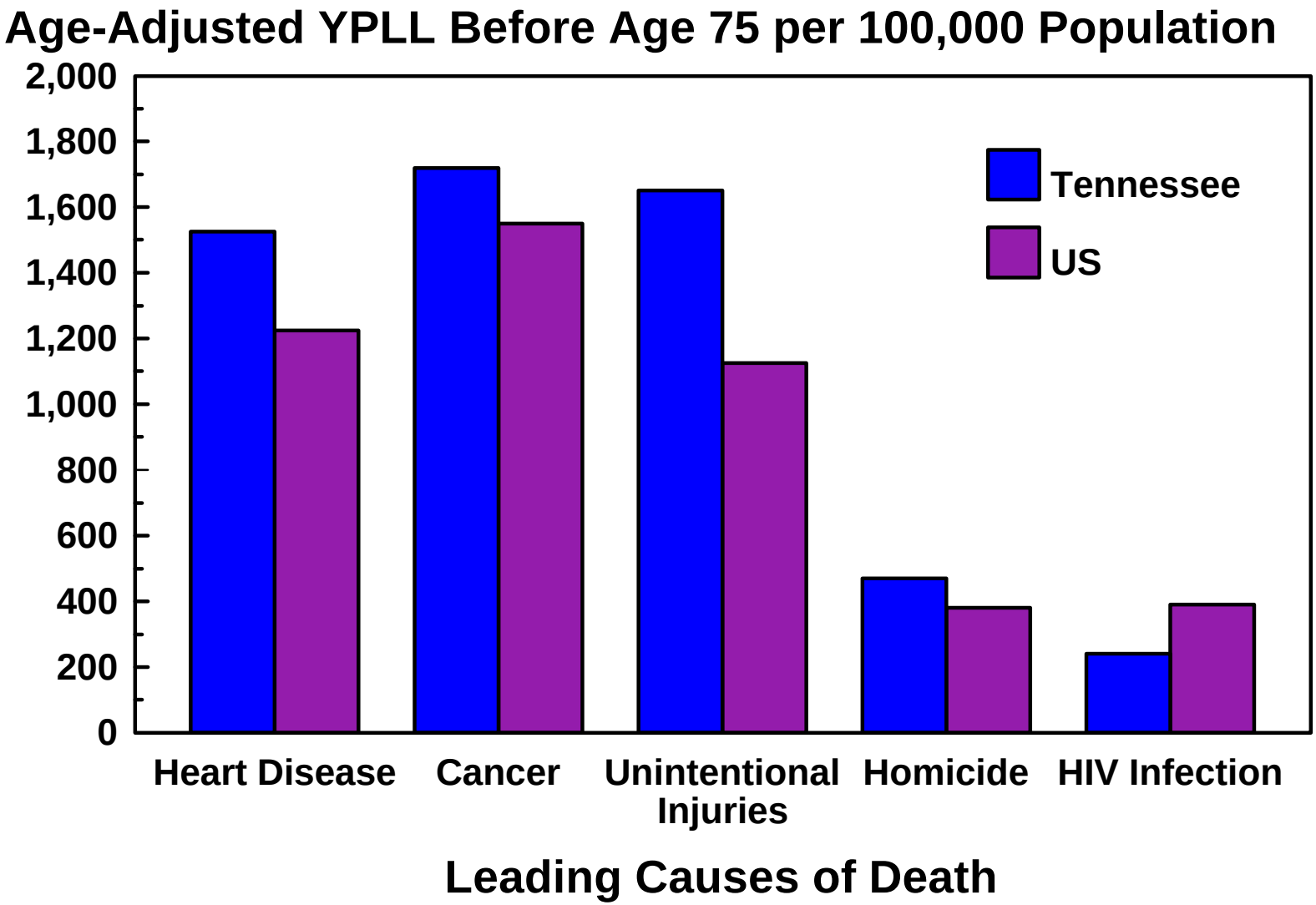
Source: Tennessee State Health Profile, 1999, CDC.

Years of Potential Life Lost (YPLL) Before Age 75, 1996



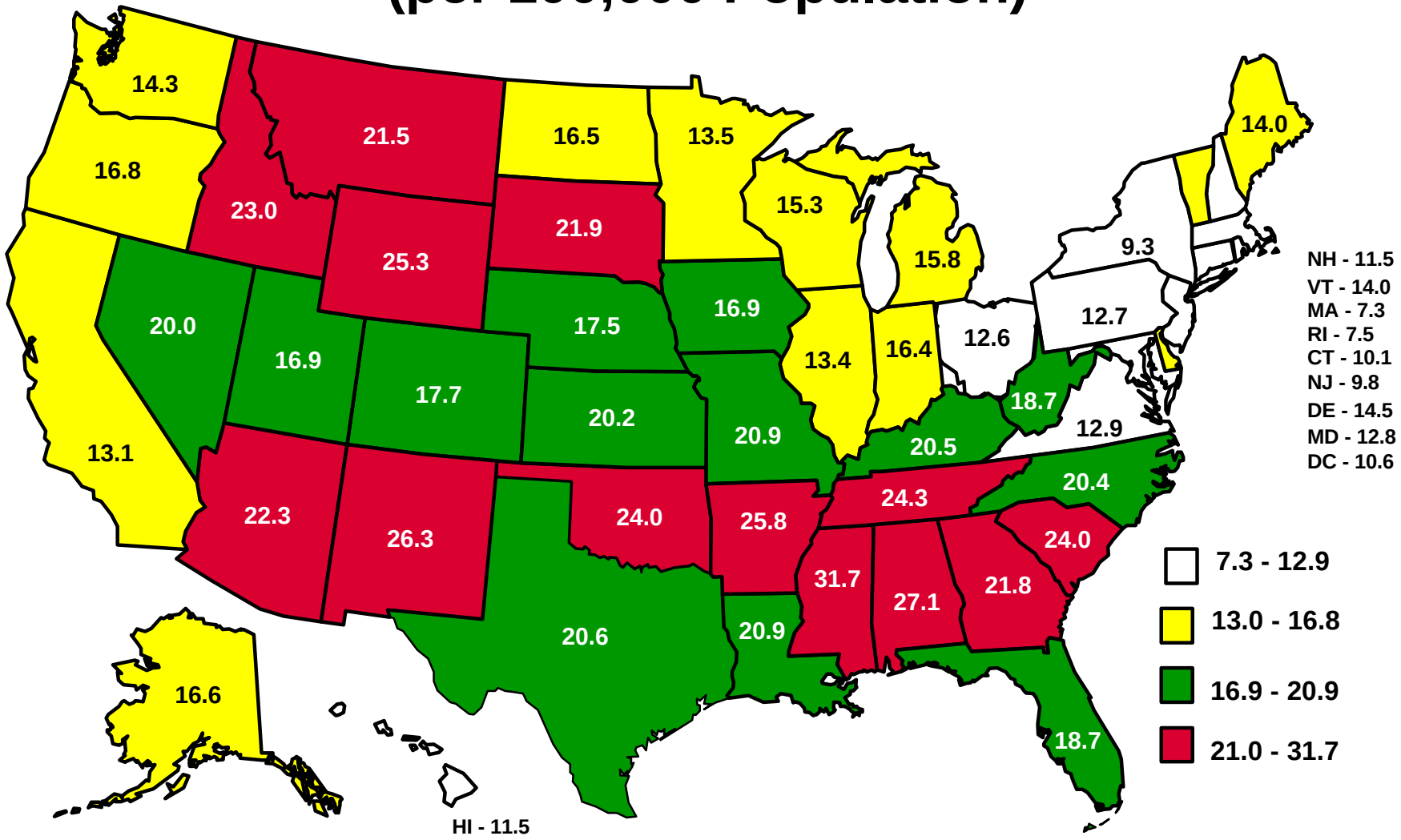
Source: Tennessee State Health Profile, 1999, CDC.

Years of Potential Life Lost (YPLL) Before Age 75: Leading Causes, Tennessee and U.S., 1996



Source: Tennessee State Health Profile, 1999, CDC.

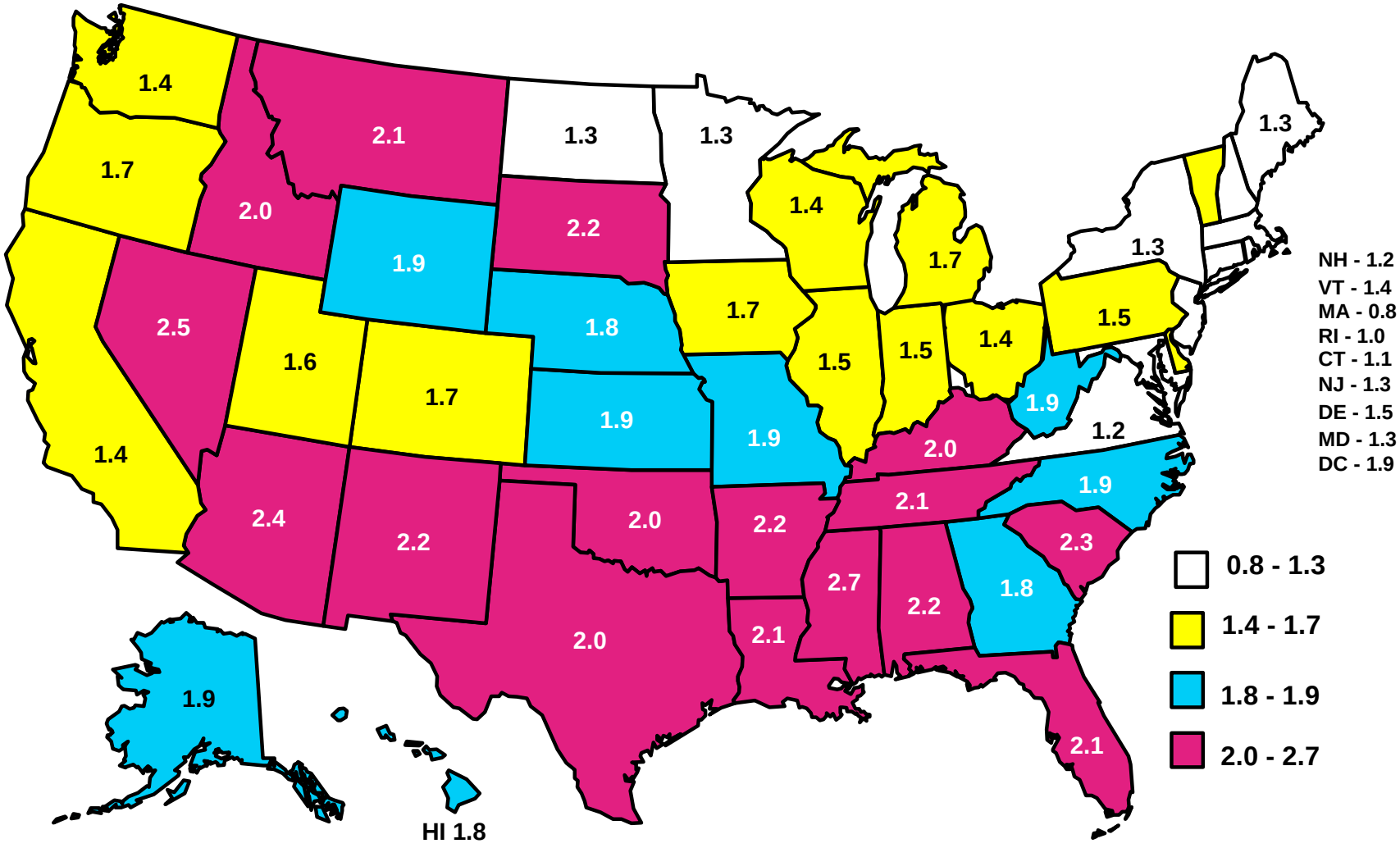
Age-Adjusted Motor Vehicle-Related Death Rates, 1996 (per 100,000 Population)



Tennessee - 24.3; United States - 16.2; Healthy People 2000 Target - 14.2

Source: Tennessee State Health Profile, 1999, CDC.

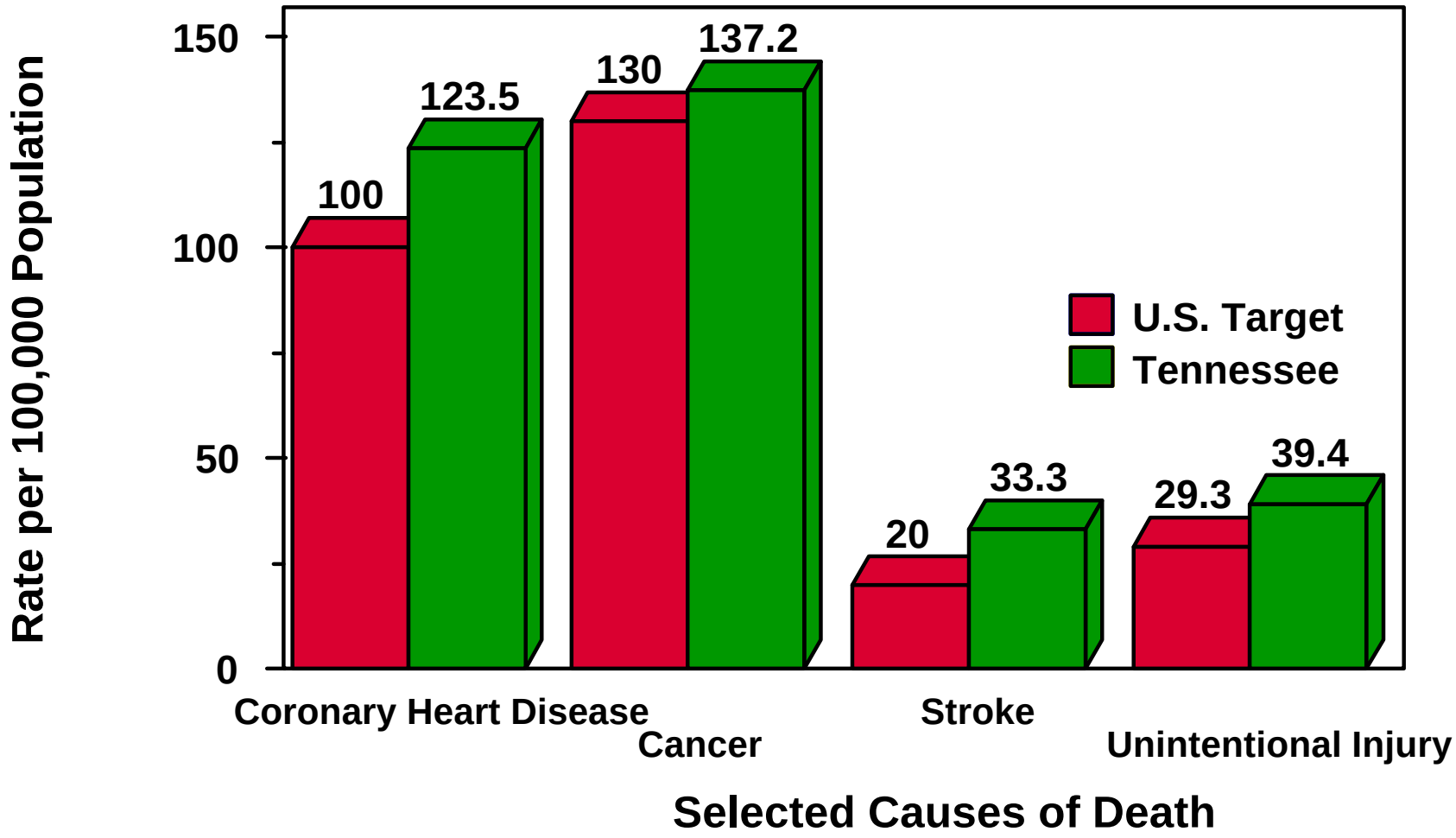
Motor Vehicle-Related Deaths per 100 Million Miles Traveled, 1996



Tennessee - 2.1; United States - 1.7; Healthy People 2000 Target - 1.5

Source: Tennessee State Health Profile, 1999, CDC.

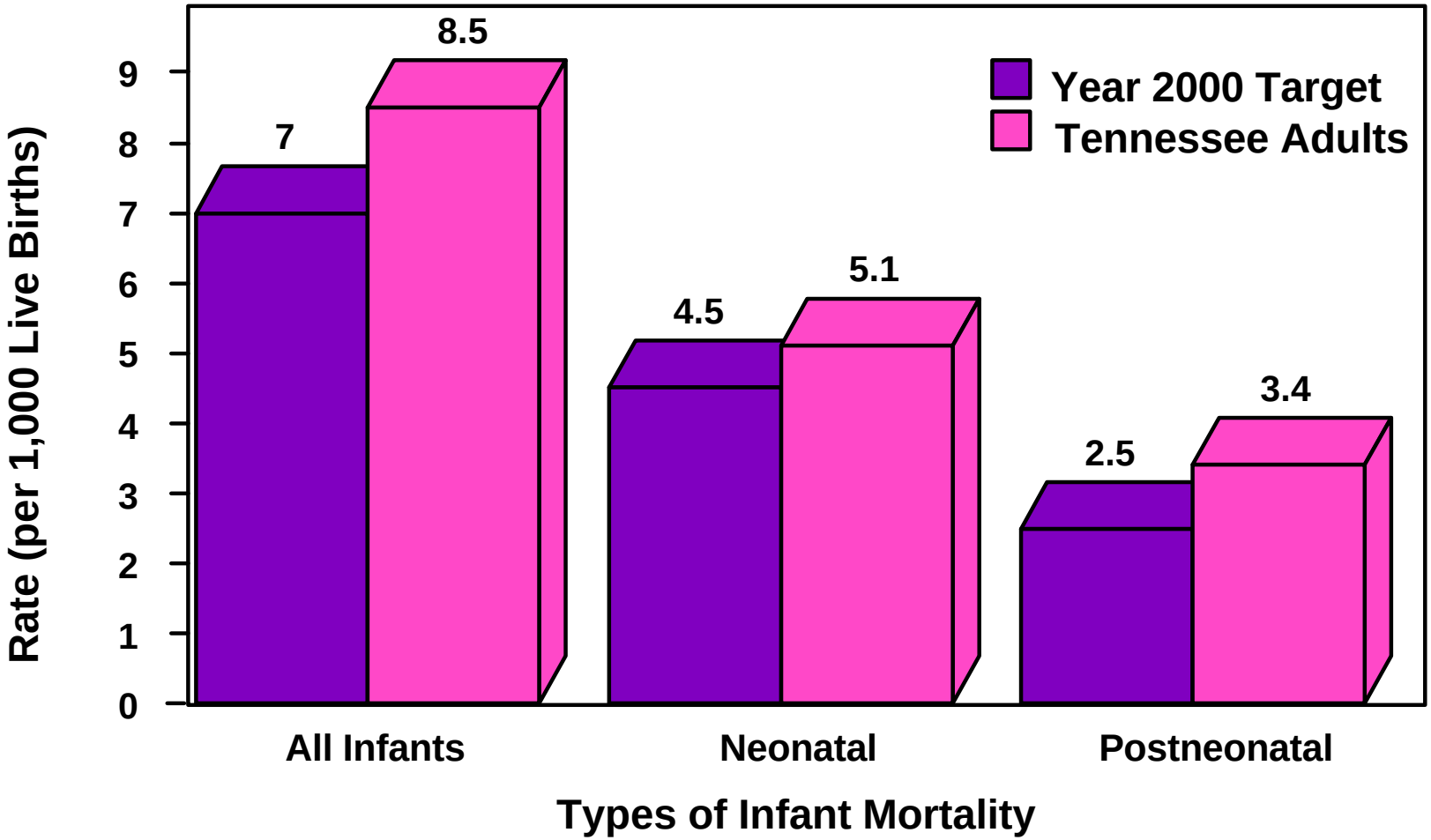
Selected 1997 Tennessee Mortality Rates and Target Year 2000 Objectives



Source: TDH and Health Information Tennessee web site (server.to/hit), CHRG-TDH 1999.
Healthy People 2000: Healthy People 2000 Review, 1997, NCHS.

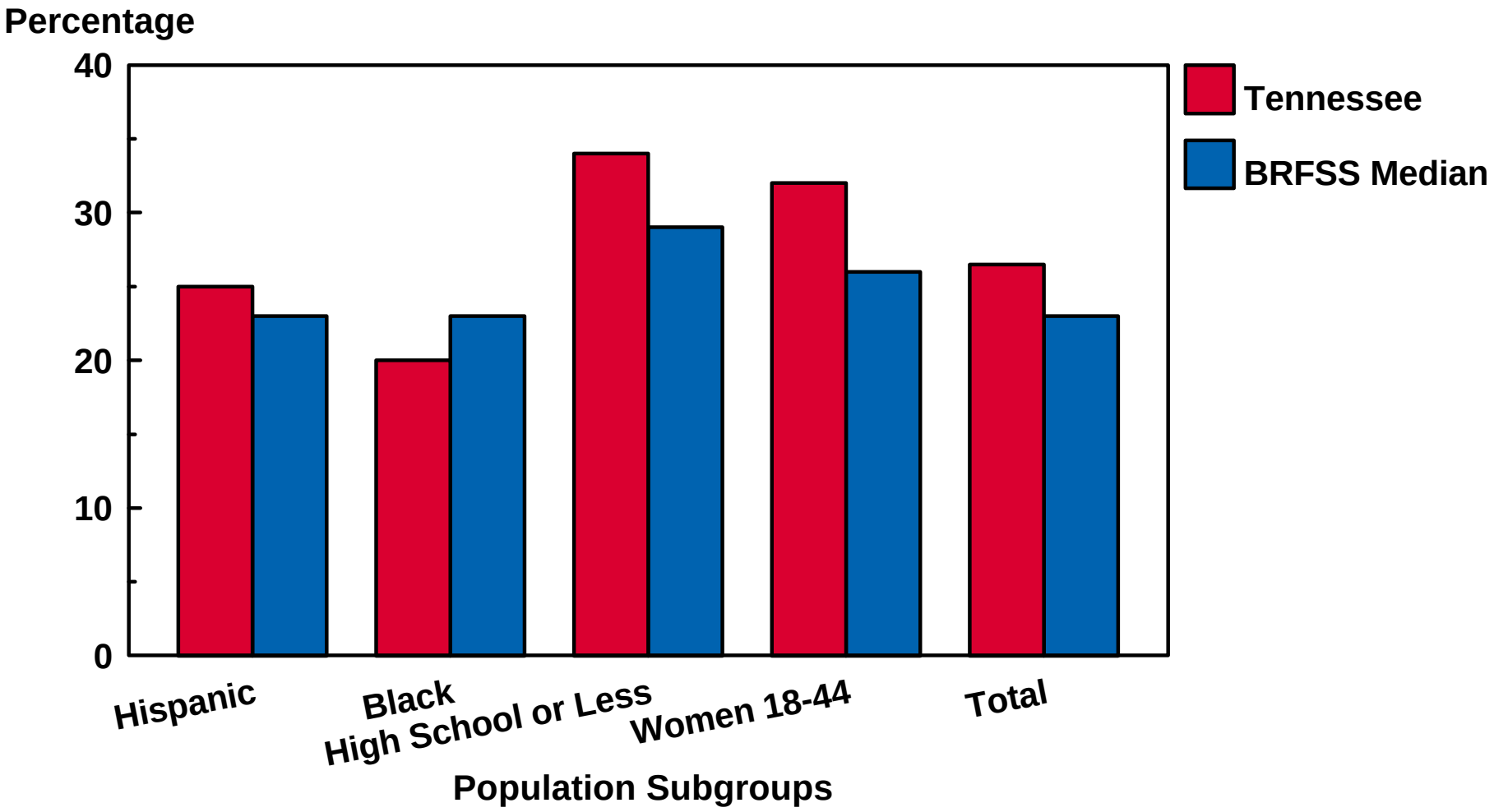
Comparison of Tennessee Mortality Rates with Target Year 2000 Objectives:

Infant, Neonatal, and Postneonatal Mortality, 1997



Source: TDH and Health Information Tennessee web site (server.to/hit), CHRG-TDH 1999.
Healthy People 2000: Healthy People 2000 Review, 1997, NCHS.

Prevalence of Smoking in Selected Demographic Groups, Tennessee and BRFSS Median, 1997



Note: Data are not available from all states for all racial/ethnic groups for median calculation; data are from the Behavioral Risk Factor Survey

Source: Tennessee State Health Profile, 1999, CDC

COMMUNICABLE DISEASES, TENNESSEE, 1997

Comparison of Selected Communicable Disease Rates, Tennessee and the U.S., 1997

- In 1997, Tennessee's rates of chlamydia, gonorrhea, syphilis, hepatitis B and tuberculosis were higher than for the U.S. as a whole.

- Tuberculosis case rates were nearly 18% higher in Tennessee (8.7 per 100,000) than in the U.S. (7.4) in 1997. Chlamydia case rates in Tennessee were also 18% higher than those of the U.S. (232.9, compared to 196.8 per 100,000).

- Gonorrhea case rates were 69% higher in Tennessee than in the U.S. (205.2, compared to 121.4 per 100,000).

- The rate of total syphilis cases in all forms was 2.5 times higher in Tennessee than in the U.S. as a whole (44.2, compared to 17.4 per 100,000). Rates of primary and secondary syphilis were substantially higher in Tennessee than in the U.S.. The rate of primary and secondary syphilis cases in Tennessee was 4.3 times higher than that of the U.S. (13.9, compared to 3.2 per 100,000).

- The rate of hepatitis B cases in Tennessee was 2.2 times higher than the rate for the U.S. (8.5, compared to 3.9 per 100,000).

- AIDS was the only communicable disease case rate which was lower for Tennessee than for the U.S. as a whole. The AIDS case rate in Tennessee was 33% lower than that for the U.S. (14.6, compared to 21.8 per 100,000).

Sources: **Summary of Notifiable Diseases, United States, 1997**. Morbidity and Mortality Weekly Report, CDC, November 20, 1998, 46(54); 1-87. TDH, Communicable and Environmental Disease Services, May 1999. HIV/AIDS Surveillance Report, U.S. HIV and AIDS Cases Reported through December 1997, CDC, Year-End Edition, vol 9. #2.

SELECTED COMMUNICABLE DISEASES, TENNESSEE AND THE U.S., 1997

Selected Diseases	U.S.		Tennessee		Percent difference in rates
	N	Rate*	N	Rate*	
AIDS	58,443	21.8	784	14.6	-33.0%
Chlamydia	526,671	196.8	12,501	232.9	+18.3%
Gonorrhea	324,907	121.4	11,018	205.2	+69.0%
Syphilis, all forms	46,540	17.4	2374	44.2	+154.0
Primary and secondary syphilis	8,550	3.2	747	13.9	+334.4%
Hepatitis B	10,416	3.9	454	8.5	+118.0%
Tuberculosis	19,851	7.4	467	8.7	+17.6%
Population, 1997 (in millions)	267,637		5,368		

* Rate represents cases per 100,000 population.

Sources: **Summary of Notifiable Diseases, United States, 1997**. Morbidity and Mortality Weekly Report, CDC, November 20, 1998, 46(54); 1-87 for U.S. Rates. Tennessee rates are from TDH, Communicable and Environmental Disease Services, May 1999. HIV/AIDS Surveillance Report, U.S. HIV and AIDS Cases Reported through December 1997, CDC, Year-End Edition, vol 9. #2.

Communicable Diseases: Regional Differences, Tennessee, 1997 and 1998

AIDS, 1997 and 1998[9]

- In 1997, the rate of AIDS incidence per 100,000 population was approximately 4.3 times higher in the metropolitan regions of Tennessee (24.0) than in the nonmetropolitan regions (5.6).

[9]Based on new cases of AIDS diagnosed in 1997 and reported through 10/26/99. Data are not adjusted for reporting delay.

- The nonmetropolitan region with the highest AIDS incidence rate was the Southwest Region (8.3 cases per 100,000), while the Upper Cumberland Region had the lowest rate of AIDS incidence in 1997 (2.1 per 100,000).

- Of the six metropolitan regions, Davidson County had the highest rate of AIDS incidence in 1997 (37.8 per 100,000). Sullivan County had the lowest rate of AIDS incidence (3.3 per 100,000).

- A total of 742 cases of AIDS were diagnosed in Tennessee in 1998. Of these cases, approximately 21% were reported in nonmetropolitan regions, while the remaining 79% were reported in Tennessee's metropolitan regions.

- The overall AIDS incidence rate in Tennessee during 1998 was 13.7 per 100,000.

- With an AIDS incidence rate of 3.2, the Upper Cumberland Region had the lowest AIDS incidence rate when compared to the other nonmetropolitan regions of Tennessee. The Southwest Region had the highest AIDS incidence rate among nonmetropolitan regions (6.6 per 100,000).

- Shelby County had the highest 1998 AIDS incidence rate (36.4 per 100,000) of Tennessee's metropolitan regions, followed by Davidson County (27.5 per 100,000). Sullivan County again had the lowest AIDS incidence rate (2.6 per 100,000) among the metropolitan regions.

Note: 1998 AIDS Data reported to HARS through 10/26/99.

Source: TDH, STD/HIV Program, HIV/AIDS Surveillance Unit. Thanks to Herb Stone for providing data for this section.

Chlamydia

- The number of chlamydia cases per 100,000 was nearly three times higher in the metropolitan regions (368.2) than in the nonmetropolitan regions (131.8).

- With a rate of 316.2 cases per 100,000, the Southwest Region was the nonmetropolitan region with the highest chlamydia case rate in 1997. The Southeast Region had the lowest rate (84.2).

- Of the metropolitan regions, Madison County had the highest chlamydia case rate (530.7), while Sullivan County had the lowest chlamydia case rate (89.6).

Gonorrhea

- Gonorrhea cases per 100,000 were nearly five times higher in the metropolitan regions (375.2) compared to the nonmetropolitan regions of Tennessee (78.3) in 1997.

- The Southwest Region was the nonmetropolitan region with the highest gonorrhea case rate (233.7), while the Upper Cumberland Region had the lowest rate (24.1).

- The metropolitan region with the highest gonorrhea case rate in 1997 was Shelby County (563.1 per 100,000), while Sullivan County had the lowest (26.5).

Syphilis

- The nonmetropolitan regions of Tennessee had a syphilis case rate that was 10 times lower than that of the metropolitan regions of Tennessee (9.8 vs. 90.3 per 100,000).

- Among the nonmetropolitan regions of Tennessee, the highest syphilis case rate (50.6) was observed for Southwest Tennessee. The Northeast Region was the nonmetropolitan region with the lowest syphilis case rate in 1997 (1 per 100,000).

- Shelby County had the highest overall syphilis case rate (165.8) of the six metropolitan regions in Tennessee. With a rate of 2.7, Sullivan County had the lowest.

- Primary and secondary syphilis cases composed 31.5% of all syphilis cases in 1997. Looking solely at primary and secondary syphilis case rates, metropolitan regions had an overall rate that was 7 times higher than that of nonmetropolitan regions (27.3, compared to 3.9 per 100,000).

Hepatitis B

- The rate of hepatitis B per 100,000 was 4.7 times higher in the metropolitan regions of Tennessee (15.4) than in the nonmetropolitan regions (3.3).

- Among the nonmetropolitan regions of the State, the West Region of Tennessee, combining the Northwest and Southwest Regions, had the highest rate of hepatitis B cases in 1997 (5.6 per 100,000), while the Northeast Region had the lowest rate (0.7 per 100,000).

- Of the metropolitan regions, Davidson County had the highest hepatitis B case rate per 100,000 (33.8), while Sullivan County had the lowest rate (2.6).

Hepatitis C

- In 1997, 242 cases of hepatitis C were reported in Tennessee.

- The 1997 rate of hepatitis C was 4.5 per 100,000, with regional differentials observed in rates of 2.8 for metropolitan regions and 5.8 for nonmetropolitan regions.

- The region with the highest hepatitis C rate in 1997 was Upper Cumberland with a rate of 18.2 per 100,000, compared to no cases reported in Sullivan County and 1.2 per 100,000 in Madison County, Tennessee.

Tuberculosis

- The rate of tuberculosis cases per 100,000 population was approximately twice as high in the metropolitan regions of Tennessee (12.0) than in the nonmetropolitan regions (6.5).

- The Upper Cumberland Region was the nonmetropolitan region with the highest rate of tuberculosis cases in 1997 (9.6 per 100,000) . With a tuberculosis rate of 3.8 cases per 100,000, the Mid-Cumberland Region had the lowest tuberculosis case rate compared to the other nonmetropolitan regions.

- At 17.1 tuberculosis cases per 100,000 in 1997, Davidson County had the highest tuberculosis case rate of the metropolitan regions. The metropolitan region with the lowest rate was Sullivan County (4.0 per 100,000).

Sources: TDH, Communicable and Environmental Disease Services, May 1999.
TDH, STD/HIV Program, HIV/AIDS Surveillance Unit, August 1998.

HIV Disease in Tennessee through 1998

Statewide Trends

- From 1982 through 1998, there were 7,366 Tennesseans with HIV disease that progressed to AIDS and have been reported. Of these persons, 3,650 were living with AIDS in 1998. Another 4,850 Tennesseans have been reported with HIV only (not AIDS) since HIV reporting began in 1992.

- All 95 counties have reported at least one person with HIV disease.

- HIV disease is increasing among women, blacks, and persons at risk due to heterosexual intercourse or needle sharing related to injecting drug use.

- Currently, 779 Tennesseans have been reported with their earliest HIV-positive test date in 1998 and with no clinical indicators of AIDS at initial report. Of these 779 persons, 29% are females, and 62% are black.

- Of these 779 persons, 615 had an identified risk as follows: 49% are men having sex with men, 32% are heterosexual intercourse, 17% are needle sharing related to injecting drug use, 2% are men having sex with men and injecting drug use combined, and <1% are related to receiving blood products, or are infants born to HIV infected mothers (n=3 each).

- Approximately one of four Tennesseans reported with HIV infection (n=4,850) is between the ages of 13 and 25 at the time of their HIV test. Persons testing HIV positive in their early 20's were possibly infected as teens.

- A decline in the number of new cases of infants developing HIV/AIDS due to perinatal exposure (i.e., being born to an HIV infected mother) has been observed.

- From 1993 through 1997, 335 HIV infected women gave birth to 387 HIV sero-exposed infants. Approximately 52 of these 387 sero-exposed infants may be expected to develop HIV infection. From 1993 through 1997, 31 infants, born during this period, have been reported with HIV infection and/or an AIDS diagnosis, although additional infants born during this period may be reported in the future because it can take up to 18 months to confirm HIV infection in a perinatally-exposed infant.

- The numbers of perinatally-exposed infants that have developed HIV/AIDS and that have been reported for the period 1993-1998 are declining.

  - Numbers of infected infants, by year of birth, reported through April 1999 are as follows: 1993=14, 1994=8, 1995=3, 1996=2, 1997=2, and 1998=1.

  - These declines are due to expanded voluntary HIV counseling and testing of all pregnant women and advances in medical care, including use of AZT, for HIV-infected pregnant women and their infants.

- Reported deaths due to AIDS have continued to decline sharply. Such deaths decreased by 21% from 286 in 1997 to 225 in 1998 [10].

  - From 1995 to 1998, a 58% decrease has been observed in the number of deaths due to AIDS, from 529 to 406 deaths in 1995-1996, and from 406 to

[10]Note: 1998 mortality data is provisional.

286 in 1996-1997. Prior to 1995, deaths due to AIDS had been increasing each year.

- While deaths due to AIDS are declining overall, declines have been greatest among whites, from 280 deaths in 1995 to 77 deaths in 1998 (73%). For blacks, deaths have declined from 246 in 1995 to 146 in 1998 (41%).

  - These declines are due to 1) better HIV intervention programs which have overall slowed the growth of the epidemic and 2) to advances in medical treatments that slow the progression of HIV disease and prevent opportunistic infections.

  - The use of protease inhibitor drugs and combination anti-retroviral therapies particularly hold promise to advance the clinical management of HIV disease.

- AIDS incidence (i.e., new cases of AIDS diagnosed each year) has been leveling off since the beginning of 1995. Adjusting for reporting delay and based on reporting through the first quarter of 1999, an estimated 881 persons were diagnosed with AIDS in 1995 and an estimated 845 were diagnosed in 1996. In 1997, an estimated 737 persons were diagnosed with AIDS. The reason for this substantial decrease in reported new AIDS cases from 1996 to 1997 is unknown at this time.[11]

- While estimates of 1998 AIDS incidence are incomplete, provisional data suggests an increase in new AIDS cases for 1998 when compared to 1997.

- The incidence of severe clinical AIDS, as reflected in the diagnosis and reporting of opportunistic infections, has declined since the beginning of 1995.

  - The number of persons diagnosed each year with an AIDS opportunistic infection since 1995 and reported through April 1999 is as follows: 1995=482, 1996=336, and 1997=270. Again, this decline is due to better intervention programs and better medical treatment for persons with HIV disease.

- It is estimated that 10,000 to 12,000 Tennesseans were living with HIV through 1998. These figures include all persons currently infected with HIV and those living with AIDS.

---

[11] It is important to note that there was a rapid growth in new AIDS cases each year prior to the leveling of incidence beginning in 1995. This growth reached a peak in 1993, due to the expansion of the AIDS case definition to include HIV infected persons with a low CD4 count. During 1994, there was a stabilizing in reporting of new AIDS cases leading up to the current period of level incidence.

- The incidence of new cases of HIV infections occurring each year in Tennessee continues to be estimated at approximately 1,000. With stable HIV incidence, and persons with HIV disease living healthier and longer, gradual increases in HIV prevalence are likely over the next few years.

- Summary: There have been dramatic changes in the HIV/AIDS epidemic in Tennessee and in the nation over the last several years.

    - For the first time since the beginning of the epidemic in Tennessee, both the number of persons diagnosed with AIDS-related opportunistic infections and AIDS-related deaths, have decreased.

    - Fewer infants are developing HIV infection as a result of being born to an HIV infected mother.

    - The diagnosis of new cases of AIDS has leveled off since the annual increases earlier in the epidemic.

    - These changes are due to better intervention programs, which have contributed overall to a slowing in the growth of the epidemic, and to better medical treatments, including the use of anti-retroviral drugs, prophylactic drugs, protease inhibitors, and combination therapies.

- Despite advances in the clinical management of the disease, HIV continues to be a serious health threat for all persons engaging in risk behaviors regardless of their gender, race, age, or sexual orientation.

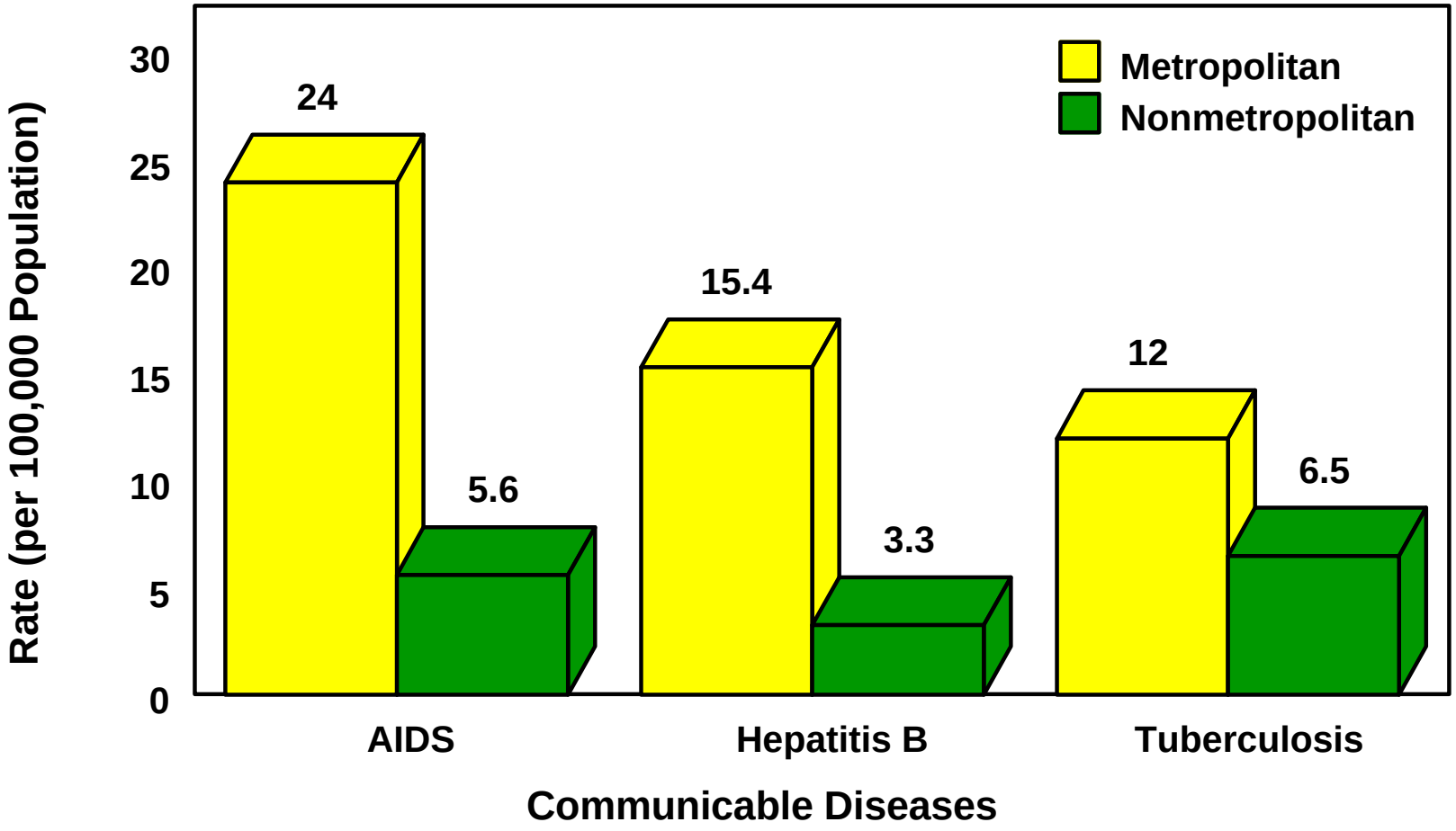
    - There are no indications of a decline in new HIV infections.

    - With stable HIV incidence and continued improvements in medical care resulting in more persons with HIV disease living healthier and longer, overall HIV prevalence will increase.

    - In a time of increasing disease prevalence and dramatic treatment advances which are costly, it remains more important than ever to continue the commitment to prevention, intervention, support, and medical services as an effective response to this epidemic.

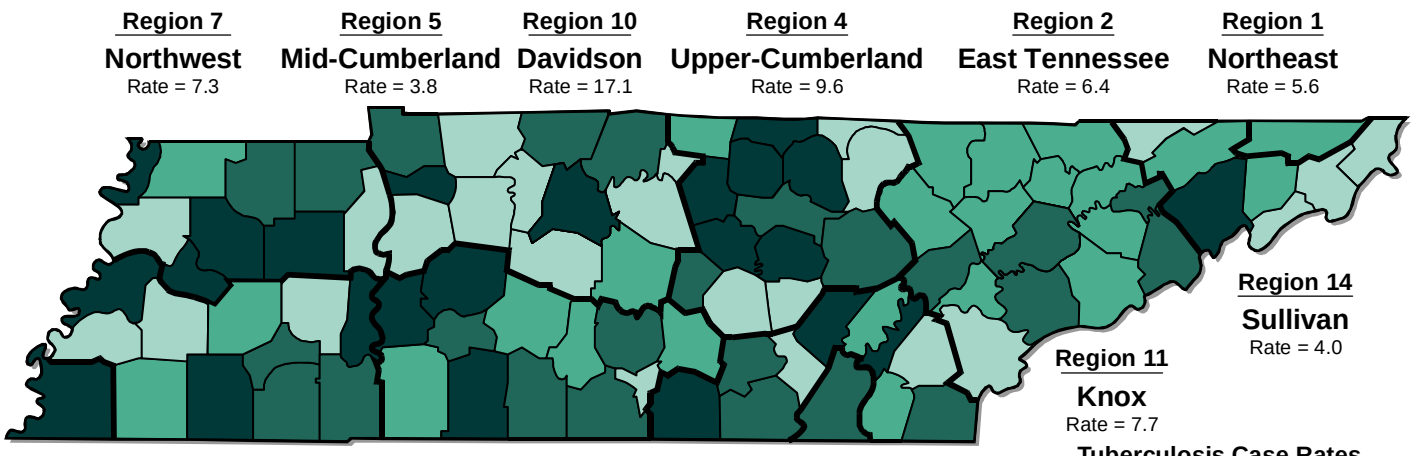
Source: Tennessee Department of Health, STD/HIV Program, Surveillance Section. For more information, contact: Herb Stone, 615-532-8495 or hstone@mail.state.tn.us.

Selected Communicable Disease Rates in Metropolitan and Nonmetropolitan Regions, Tennessee, 1997



Source: TDH, Communicable and Environmental Disease Services, May 1999.
TDH, STD/HIV Program, HIV/AIDS Surveillance Unit, August 1998.

TUBERCULOSIS CASE RATES PER 100,000 POPULATION BY COUNTY AND REGION, TENNESSEE, 1997



Region 7
Northwest
Rate = 7.3

Region 5
Mid-Cumberland
Rate = 3.8

Region 10
Davidson
Rate = 17.1

Region 4
Upper-Cumberland
Rate = 9.6

Region 2
East Tennessee
Rate = 6.4

Region 1
Northeast
Rate = 5.6

Region 14
Sullivan
Rate = 4.0

Region 11
Knox
Rate = 7.7

Region 9
Shelby
Rate = 14.2

Region 13
Madison
Rate = 4.7

Region 8
Southwest
Rate = 7.5

Region 6
South Central
Rate = 7.9

Region 12
Hamilton
Rate = 7.8

Region 3
Southeast
Rate = 6.1

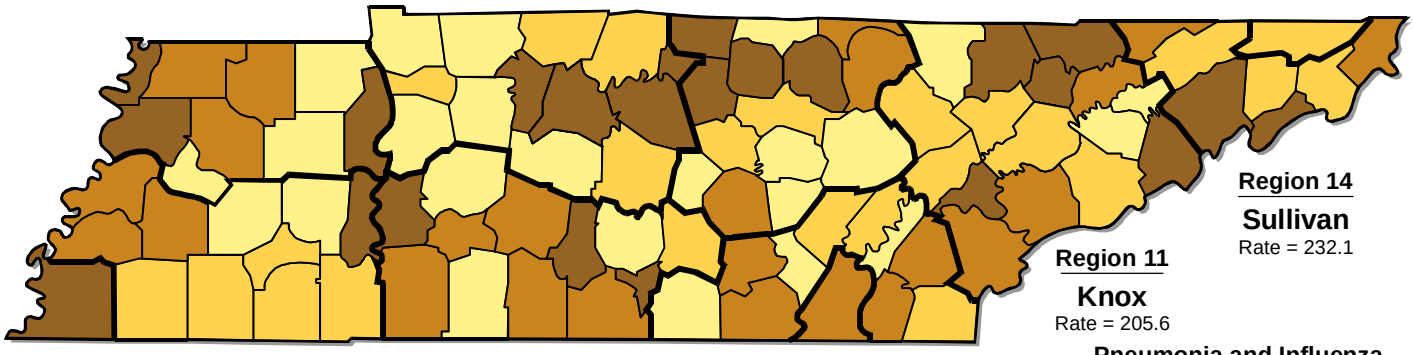
Tuberculosis Case Rates

- 0 to 2.9
- 3.0 to 6.3
- 6.4 to 9.5
- 9.6 to 27.3

Statewide Rate = 8.7

Source: Tennessee Department of Health, Communicable and Environmental Disease Services, Tuberculosis Control Unit.

ANNUAL AVERAGE PNEUMONIA AND INFLUENZA DEATH RATES PER 100,000 POPULATION AGES 65 AND OVER, BY COUNTY AND REGION, TENNESSEE, 1995-1997



Region 7
Northwest
Rate = 248.0

Region 5
Mid-Cumberland
Rate = 202.9

Region 10
Davidson
Rate = 306.7

Region 4
Upper-Cumberland
Rate = 221.3

Region 2
East Tennessee
Rate = 244.8

Region 1
Northeast
Rate = 244.8

Region 14
Sullivan
Rate = 232.1

Region 11
Knox
Rate = 205.6

Region 9
Shelby
Rate = 307.9

Region 13
Madison
Rate = 192.7

Region 8
Southwest
Rate = 229.9

Region 6
South Central
Rate = 253.3

Region 12
Hamilton
Rate = 257.1

Region 3
Southeast
Rate = 236.1

Pneumonia and Influenza Death Rates

- 104.2 to 192.7
- 192.8 to 233.5
- 233.6 to 291.8
- 291.9 to 658.2

Statewide Rate = 249.0

Source: Tennessee Department of Health and HIT Web site (server.to/hit).

ADOLESCENT PREGNANCY RATES, BIRTH RATES AND ADVERSE CONDITIONS, TENNESSEE, 1990-1997

- In 1997, Tennessee met or exceeded the State's own Year 2000 objectives for reducing pregnancy rates among females aged 14 and younger and aged 15-17. These objectives are 2.5 per 1,000 and 55 per 1,000, respectively. The 1997 pregnancy rate for females aged 10-14 was 2.2 per 1,000, compared to 2.5 per 1,000 in 1996 and 2.6 per 1,000 in 1995. The 1997 pregnancy rate for females aged 15-17 was 50.2 per 1,000, compared to 51.9 per 1,000 in 1996 and 55.8 per 1,000 in 1995.

- The 1997 pregnancy rate for Tennessee females aged 15-17 (50.2) meets the national goal established by Healthy People 2000 of 50 per 1,000 for that age group as well as exceeding the Tennessee Year 2000 Objective.

- Tennessee's adolescent pregnancy rate achieved a new all-time low again in 1997. The pregnancy rate for females aged 10-17 was 20.2 per 1,000 in 1997, down from 21.1 per 1,000 in 1996 and 21.8 per 1,000 in 1995. The number of Tennessee females aged 10-17 who became pregnant continued to decline in 1997. In 1997, 5,903 teenagers were reported as pregnant compared to 6,138 in 1996 and 6,267 in 1995.

- The large discrepancy between the pregnancy rates of white and black adolescents continued. The pregnancy rate for white adolescent females (aged 10-17) was 14.9 per 1,000 for 1997, down from 15.6 in 1996. The pregnancy rate for black adolescent females was 40.4 per 1,000 for 1997, down from 42.2 in 1996. While both groups' pregnancy rates continued to decline, the race differential remained at more than 2.5 times.

- Adolescent pregnancy rates decreased from 25.4 per 1,000 in 1990 to 20.2 per 1,000 in 1997. The adolescent pregnancy rate underwent a 21% decline during this period.

    - Adolescent pregnancy rates continued to decline in 1997 for both black and white females. The adolescent pregnancy rate for black females was 40.4 per 1,000 in 1997, having decreased by 19% from the 1990 rate of 49.7 per 1,000. The adolescent pregnancy rate for whites declined even more (by 22%) from the 1990 rate of 19.2, to 14.9 per 1,000 in 1997.

- Counties in Tennessee with the lowest pregnancy rates in 1997 for females aged 10-17 were Claiborne (6.2 per 1,000), Moore (6.6 per 1,000), Wayne (6.7 per 1,000) and Williamson (6.8 per 1,000). Counties in Tennessee with the highest pregnancy rates in 1997 for females aged 10-17 were Haywood (45.7 per 1,000), Shelby (31.7 per 1,000), Lauderdale (31.2 per 1,000) and Hamblen (27.2 per 1,000).

- Adolescent birth rates have continued to decline in Tennessee. Adolescent birth rates decreased from 17.7 per 1,000 adolescent females in 1990 to 15.5 in 1997. The adolescent birth rate declined by 12% from 1990 to 1997.

- Birth rates declined for both white and black adolescent females in 1997. The adolescent birth rate for black females was 30.9 per 1,000 for 1997, a decline of 14% from 1990. The adolescent birth rate for white females was 11.4 per 1,000, a decline of 12% from 1990, matching the overall decline during that period.

- The percentage of births to females aged 10-17 who received no prenatal care increased very slightly in 1997, with 2.9% receiving no prenatal care, compared to 2.5% in 1996. In 1997, 1.9% of births to white adolescent females and 4.2% of births to black adolescent females received no prenatal care. In 1996, about the same percentage of births to whites (1.8%), but a lower percentage of births to blacks (3.5%), lacked prenatal care. Lack of prenatal care among adolescent mothers has declined since 1990 overall (3.1%) and among blacks (4.9%). It has remained stable among whites (1.7% in 1990).

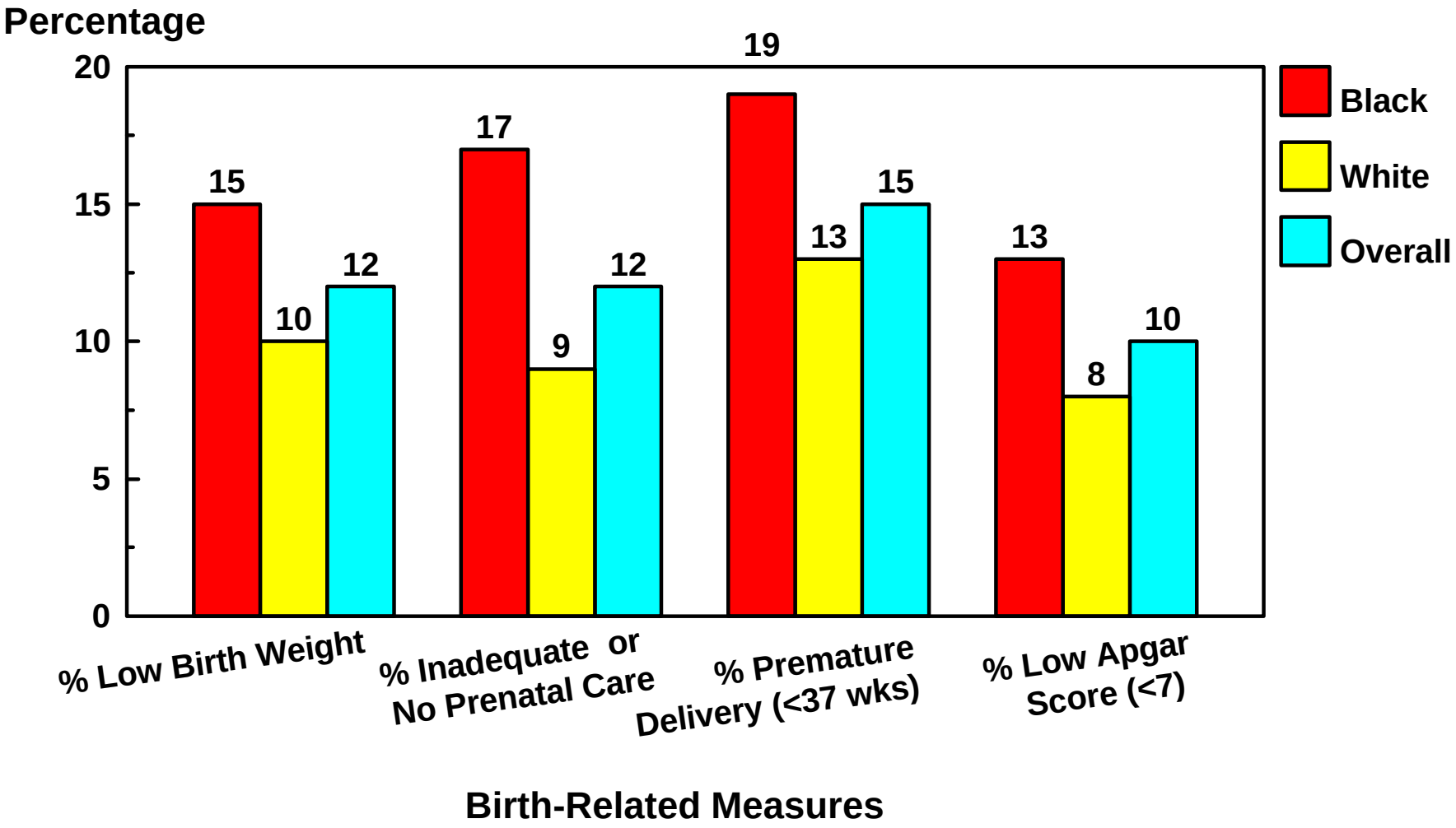
- The percentage of births to adolescent females (aged 10-17) who received inadequate prenatal care continued to decline for all adolescent females and for black females in 1997, while there was a slight increase for white females when compared to 1996 percentage levels. The percentage of births to adolescent females who received inadequate care in 1997 was 9.3% overall, 12.3% among blacks, and 7.1% among whites. In 1990, the corresponding percentages were 13.2%, 18.9% and 9.1% respectively. This change from 1990 to 1997 represents declines in the percentage of births to adolescent females who received inadequate care of 30% overall, 35% among blacks and 22% among whites.

- Adolescent females (aged 10-17) who received either inadequate or no prenatal care represented 12% of births in 1997, similar to 1996 levels. In 1990, 16% of births to females aged 10-17 received inadequate or no prenatal care. In 1997, 17% of births to black adolescent females and 9% of births to their white counterparts were accompanied by inadequate or no prenatal care. This race differential amounts to nearly two-fold. Declines since 1990 in the proportion of births to females aged 10-17 who received inadequate or no prenatal care have reached 25% overall, with greater declines among blacks (29%) than whites (18%).

- Births to unmarried Tennessee females ages 10-17 continued to rise in 1997. That figure was 85.9% in 1997, compared to 73.1% in 1990. This represents an 18% increase in the number of births to unmarried adolescent females from 1990 to 1997. Nearly all black adolescent births are to unmarried females (98.4% in 1990 and 99.3% in 1997). The percentage of births to unmarried white females ages 10-17 has increased by 40% between 1990 (54.7%) and 1997 (76.4%).

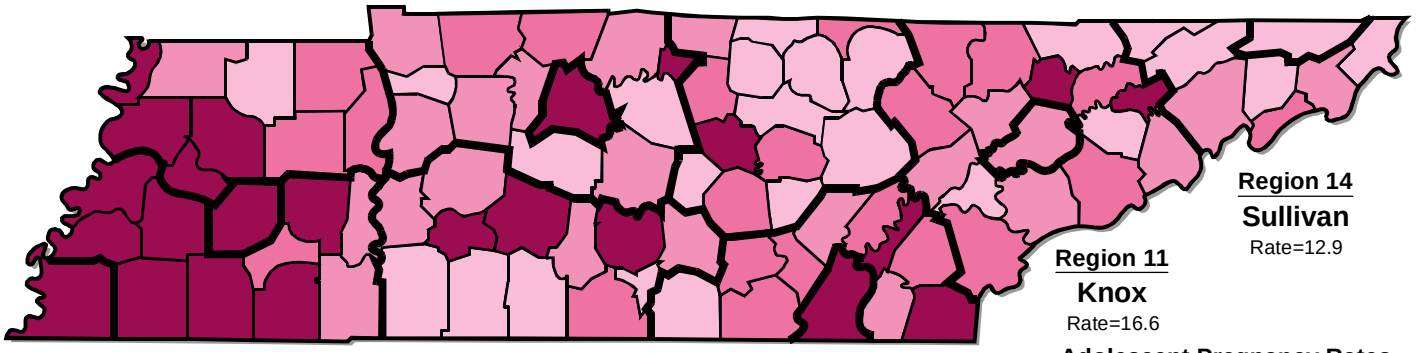
Source: **Tennessee Adolescent Pregnancy Summary Data**, Health Statistics and Information, TDH, January 1999.
Chart and map

Comparison of Selected Birth-Related Measures for Females Aged 10-17 by Race and Overall, Tennessee, 1997



Source: Health Information Tennessee Web site (server.to/hit)

ANNUAL AVERAGE ADOLESCENT PREGNANCY RATES PER 1,000 FEMALES AGED 10-17 BY COUNTY AND REGION, TENNESSEE, 1995-1997



Region 7
Northwest
Rate=20.7

Region 5
Mid-Cumberland
Rate=15.9

Region 10
Davidson
Rate=26.0

Region 4
Upper Cumberland
Rate=16.0

Region 2
East Tennessee
Rate=17.8

Region 1
Northeast
Rate=15.2

Region 14
Sullivan
Rate=12.9

Region 11
Knox
Rate=16.6

Region 9
Shelby
Rate=31.7

Region 13
Madison
Rate=21.8

Region 8
Southwest
Rate=25.4

Region 6
South Central
Rate=18.5

Region 12
Hamilton
Rate=20.8

Region 3
Southeast
Rate=18.5

Adolescent Pregnancy Rates

- 7.9 - 14.9
- 15.0 - 18.1
- 18.2 - 20.7
- 20.8 - 40.5

Statewide Rate = 21.1

Source: **Tennessee's Health - Picture of the Present 1997**, Office of Health Statistics and Information, TDH, 1999.

THE MENTAL HEALTH OF TENNESSEANS

Estimates of Serious Mental Illness among Adults

- Adults with a serious mental illness have been defined as persons 18 years of age and older who currently have, or have had at any time during the past year, a diagnosable mental, behavioral, or emotional disorder of sufficient duration to meet diagnostic criteria as specified within DSM-IV, (*Diagnostic and Statistical Manual of Mental Disorders, 4th Edition*) that has resulted in functional impairment, subsequently interfering with or limiting one or more major life activities.

- It is estimated that over 10 million adults in the U.S. household population have serious mental illness.

- Estimates of serious mental illness among adults in the United States can be used to estimate the number of adults in Tennessee with serious mental illness. Applying point estimate percentages for the United States to the adult population within Tennessee, 216,696 adults (ages 18 and over) would have serious mental illness in 1997. This represents 5.4% of Tennessee's adult population, and approximately 4% of Tennessee's total population.

Source: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, HHS. *Estimation Methodology for Adults with Serious Mental Illness (SMI)*. Federal Register: June 24, 1999, Volume 64, No. 121. USDHHS, Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment. *Contracting for Managed Substance Abuse and Mental Health Services: A Guide for Public Purchasers*. DHHS Pub. No. (SMA) 98-3173. Technical Assistance Publication Series 22, October 1, 1998.

Estimates of Serious Emotional Disorder among Children

- Children with a serious emotional disorder are defined as persons up to age 18 who currently, or have had at any time during the past year, a diagnosable mental, behavioral or emotional disorder of sufficient duration to meet diagnostic criteria specified within DSM-IV, that has resulted in functional impairment, subsequently interfering with or limiting the child's role or functioning in family, school, or community activities.

- The percentage of children ages 9-14 with serious emotional disturbance in the United States ranges from 6%-8% for a Children's Global Assessment Scale level of functioning equal to 50, and 10%-12% for a level of functioning equal to 60.

- Based on the percent of children in poverty and the level of functioning from the Children's Global Assessment Scale, the percentage of children (ages 9-17) estimated with serious emotional disturbance in Tennessee ranges from 7% - 13%.

- Based on a level of functioning equal to 50, the number of Tennessee children estimated to have serious emotional disturbance ranges from 47,287 to 60,798 in 1997. Based on a level of functioning equal to 60, the number of Tennessee children estimated with serious emotional disturbance ranges from 74,309 to 87,819 in 1997.

Source: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, HHS. *Children with Serious Emotional Disturbance; Estimation Methodology*. Federal Register: July 17, 1998, Volume 63, No. 137. USDHHS, Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment. *Contracting for Managed Substance Abuse and Mental Health Services: A Guide for Public Purchasers*. DHHS Pub. No. (SMA) 98-3173. Technical Assistance Publication Series 22, October 1, 1998.

Mental Health Facilities

- The number of mental health organizations in Tennessee in 1994 were as follows:

-	State and county mental hospitals	5
-	Private psychiatric hospitals	11
-	Non-Federal general hospitals with psychiatric services	48
-	VA medical centers	4
-	All other mental health organizations	36

- Of the mental health organizations existing in Tennessee in 1994, all of the state and county mental hospitals, private psychiatric hospitals, and VA medical centers provided either 24-hour hospital or residential services. Of the 48 non-federal general hospitals with psychiatric services, all but one provided either 24-hour hospital or residential services. These services were also provided by 22, or 63%, of other mental health organizations within the State.

- The number of mental health organizations providing less than 24-hour hospital and residential services in Tennessee in 1994 were as follows: state and county mental hospitals - 1; private psychiatric hospitals - 8; non-federal general hospitals with psychiatric services - 15; VA medical centers - 4; and all other mental health organizations - 35.

- As of May 1999, there were 25 state mental health residential treatment facilities within Tennessee. Nine were in East Tennessee, 12 were in Middle Tennessee, and 4 were in West Tennessee.

- The capacity of the mental residential treatment facilities within East, Middle, and West Tennessee are as follows: East Tennessee - 331 persons; Middle Tennessee - 287 persons; and West Tennessee - 108 persons.

Source: Center for Mental Health Services. Mental Health, United States, 1998. Manderscheid, R.W., and Henderson, M.J., eds. DHHS Pub. No. (SMA)99-3285. Washington, DC: Supt. Of Docs., U.S. Govt. Print. Off., 1998. Department of Mental Health and Mental Retardation, TDH, May 1999.

Mental Health Personnel

- In 1996, 421 clinically active mental health personnel were estimated to be in the field of psychiatry within Tennessee. There were 8 psychiatrists per 100,000 civilian population, compared to 11.3 for the United States for that year.

- The number of clinically trained mental health personnel within psychology in 1997 was 1,074. Tennessee's rate of clinically trained psychologists in 1997 was 20 per 100,000 civilians. The 1997 rate for the United States was 27.5.

- In 1998, there were 1,234 clinically trained mental health personnel in the field of social work, or 23 per 100,000 civilian population. The corresponding rate for the Untied States was 36.2.

- Tennessee had 72 clinically trained mental health personnel in the field of psychiatric nursing in 1995, or 1.3 per 100,000 civilian population. The corresponding rate for the United States was 2.6.

- Eight hundred clinically trained mental health personnel were involved in counseling in Tennessee in 1998. Tennessee's rate per 100,000 civilian population for counseling personnel was 14.9; the overall rate for the United States was 36.2.

- In 1998, the number of marriage and family therapists in Tennessee was 247; the rate was 4.6 per 100,000 civilian population. The overall rate for the United States was 16.7.

- In 1996, the number of mental health professionals within the field of psychosocial rehabilitation was 600. The rate of these professionals per 100,000 civilian population in Tennessee was 11.2, compared to 37.7 for the United States.

- In 1995, Tennessee had 245 school psychologists, a rate of 4.6 school psychologists per 100,000 population. The rate for school psychologists in the United States was nearly double Tennessee's rate, at 8.4 per 100,000.

Source: Center for Mental Health Services. Mental Health, United States, 1998. Manderscheid, R.W., and Henderson, M.J., eds. DHHS Pub. No. (SMA)99-3285. Washington, DC: Supt. Of Docs., U.S. Govt. Print. Off., 1998.

TENNESSEE'S RANKINGS ON SELECTED CRIME INDICATORS COMPARED TO OTHER STATES AND THE U.S.

Crime statistics can be correlated with health problems within a state. Selected crime rates in Tennessee can be ranked among crime statistics from other states to help determine the impact of health problems in Tennessee.

Offenses, 1997

- In 1997, Tennessee had the second highest violent crime rate with firearms in the nation. Tennessee's rate of 403.1 violent crimes per 100,000 population was much higher than the national rate of 170.6.

- Forty-two percent of violent crimes in Tennessee in 1997 involved firearms, compared to 27% nationally.

- In 1997, Tennessee had the 7th highest murder rate (9.5 murders per 100,000), and the 5th highest murder rate with firearms (8.6). Nearly 76% of murders occurring in Tennessee in 1997 involved firearms, compared to 67.5% nationally.

Arrests Associated with Substance Use and Abuse, 1997

- In 1997, there were 14,174 reported arrests for Driving Under the Influence (DUI) of alcohol or other drugs in Tennessee. This placed Tennessee 25th among the rest of the states for the number of DUI arrests.

- Tennessee's arrest rate for DUI was 631.9 arrests per 100,000 population, making Tennessee's DUI arrest rate 14th in the United States. The national DUI arrest rate in 1997 was 538.3 reported arrests per 100,000 population.

- With an arrest rate of 647.4 per 100,000 population, Tennessee ranked 13th among states in drug abuse violation arrest rate. The corresponding arrest rate for the nation was 601.6.

Juvenile Arrests, 1997

Juvenile Offenses, 1997

- With 466 arrests, Tennessee ranked 25th among the states for numbers of arrests of juveniles for weapons violations in 1997. Tennessee ranked 15th in the nation for rates of arrests of juveniles for weapons violations (per 100,000 juvenile population).

- Arrests of juveniles for weapons violations represented approximately 15% of all such arrests occurring in Tennessee in 1997. This was lower than the corresponding national percentage (23.9%).

- At a rate of 69.1 arrests per 100,000 juvenile population, Tennessee had the 21st highest juvenile arrest rate for driving under the influence in 1997.

  - Arrests of juveniles for driving under the influence represented 1.2% of all such arrests occurring in Tennessee, which was very similar to the national percentage (1.3%).

- Tennessee ranked 14th among all states in arrests of juveniles for drug-related violations per 100,000 juvenile population.

  - Arrests of juveniles for drug-related violations in Tennessee represented 12% of all such arrests in 1997. This was slightly lower than the national percentage of 13.9%.

Abuse and Neglect

- With a child abuse and neglect rate of 8.7 per 1,000 children (population under 18), Tennessee ranked 37th among other states in 1996. The national rate of child abuse and neglect in 1996 was almost twice as high (16.6).

- In 1995, however, Tennessee ranked 8th among other states in child abuse and neglect fatalities per 100,000 children. With a child abuse and neglect fatality rate of 2.3, Tennessee's rate exceeded the national rate of 1.6.

Alcohol and Other Drug Treatment, 1995

- In 1995, Tennessee ranked 30th among other states in the number of alcohol and other drug treatment units within the state (n=60). Tennessee ranked 37th in the number of admissions (n=10,670) to these treatment units.

- Seventy-one percent of all admissions to alcohol and drug treatment programs in Tennessee were males. This was slightly higher than the national prevalence of approximately 69%.

- Of all admissions to alcohol and other drug treatment programs in 1995, 68% were whites and 29% were blacks.

- Tennessee ranked 47th among states in per capita expenditures for state-supported alcohol and other drug abuse services in 1995. The national per capita

expenditure amount of $15.35 was nearly three times higher than that for Tennessee ($5.50).

- Among other states, Tennessee ranked 48th in per capita expenditures for state-supported alcohol and other drug abuse treatment programs. Tennessee's per capita expenditure ($3.46) was approximately 3.5 times lower than that for the nation ($12.10).

- Tennessee ranked 30th in per capita expenditures for state-supported alcohol and other drug abuse prevention programs.

- Ranking 16th in expenditures per alcohol and other drug treatment admission in 1995, the rate of treatment expenditures per admission in Tennessee ($1,696) was nearly identical to the national rate of $1,694.

TENNCARE ENROLLMENT, AS OF MAY 1999

- Statewide, 1,287,704 persons were enrolled in TennCare as of May 1999. The TennCare enrollment rate for Tennessee, defined as the percent of the population enrolled in TennCare, was 23.5%.

- Of those individuals enrolled in TennCare, 585,990 (45.5%) were 18 years of age and under. This represents 40% of all persons 18 and under in Tennessee.

- Shelby County had the highest percentage of TennCare enrollees in the program (18%), followed by East Tennessee (14%). The lowest percentages of enrollees were in Northwest Tennessee and Hamilton County (4.9% each).

- The regions with the highest TennCare enrollment rates were Upper Cumberland - 29%; Southwest Tennessee (including Madison County) - 28%; and East Tennessee - 28%. The Mid-Cumberland region had the lowest TennCare enrollment rate (16%). Shelby County, which had the highest percentage of TennCare enrollees statewide, had a regional enrollment rate of 27%.

- The three counties with the highest TennCare enrollment rates were Fentress - 49%; Scott - 48%; and Grundy - 47%. The three counties with the lowest enrollment rates were Williamson - 8%; Rutherford - 14%; and Wilson - 15%.

- TennCare eligibles are classified into eight main categories: infants (under one year of age), children ages 1 to 13, males ages 14 to 44, females ages 14 to 44, adults ages 45 to 64, adults ages 65 and over, dual eligibles enrolled in both Medicaid and Medicare, and the blind and disabled. The percentage of persons enrolled in TennCare as of May 1999 by these established categories were:

  2.7% - Under one year of age
  29% - Ages 1 to 13
  10% - Ages 14 to 44 (Males)
  21% - Ages 14 to 44 (Females)
  7% - Ages 45 to 64
  1.2% - Ages 65 and Over
  13.5% - Medicaid/Medicare Duals
  14% - Aid to the Blind and Disabled

- Among TennCare enrollees as of May 1999, 63% were Medicaid eligibles, while 37% were uninsured/uninsurables.

- Of the 810,105 Medicaid eligibles enrolled in TennCare, 31% were ages 1 to 13; 20% were Medicaid/Medicare duals; 19% were females ages 14 to 44; and 19%

were blind/disabled. The category with the lowest percentage of Medicaid eligibles consisted of individuals ages 65 and over (0.7%), who are mainly covered by Medicare. Approximately one percent of Medicaid eligibles were ages 45 to 64; 3.7% were less than one year of age; and 5.5% were males between 14 and 44 years of age.

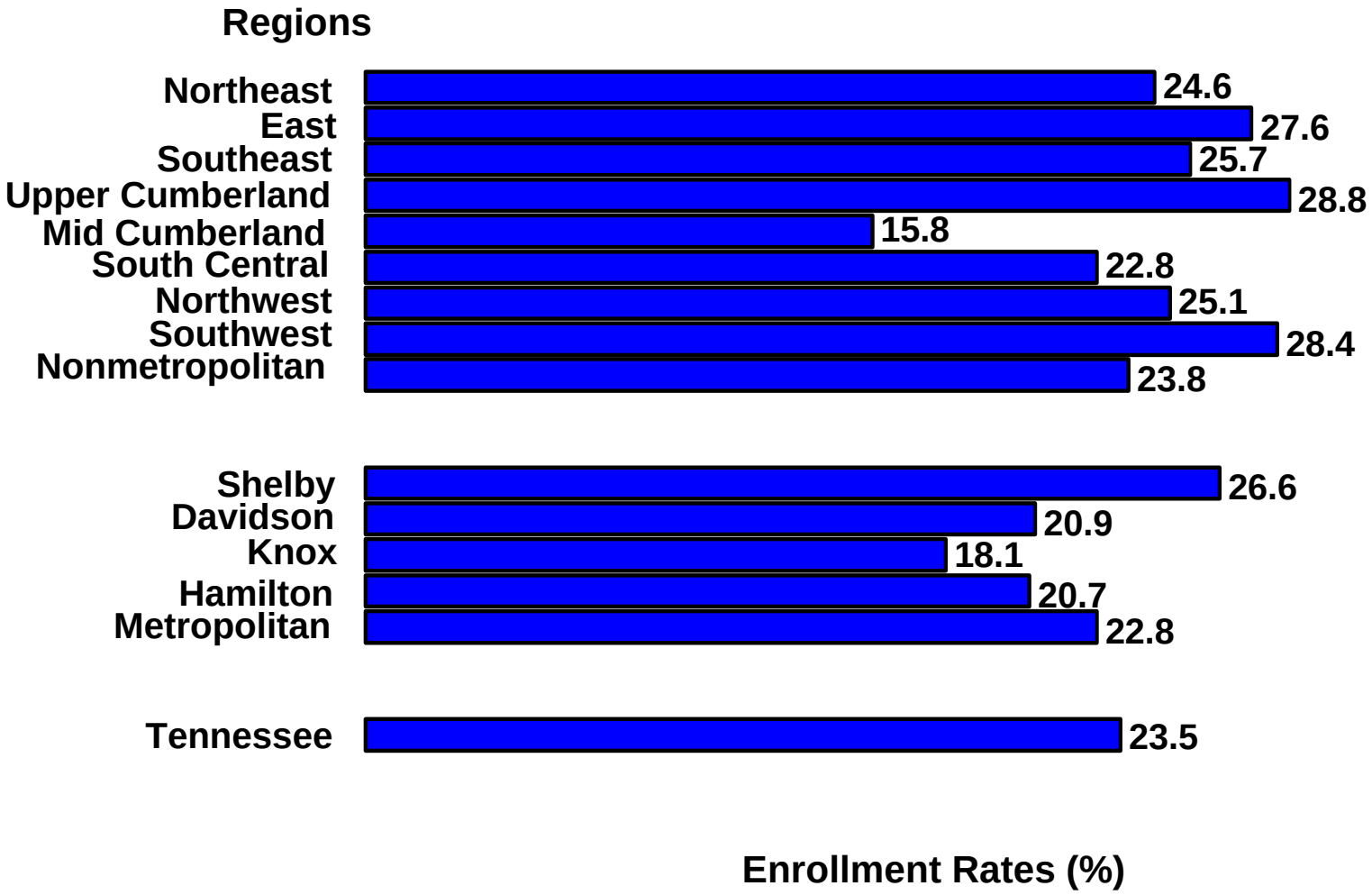
- Of the uninsured/uninsurable enrollees in the TennCare program, half were either children aged 1-13 (25.5%) or females aged 14-44 (25%). Infants represented the lowest percentage of uninsured/uninsurable enrollees (1.0%). Thirty-six percent of uninsured/uninsurables were adults ages 45 to 64 and males ages 14 to 44 (18% each). Two percent of this group were aged 65 and over; nearly 3% were dually eligible for Medicaid/Medicare; and 7% were classified as blind/disabled.

- The Managed Care Organizations (MCO's) with the largest percentages of TennCare enrollees were BlueCare (46%), Access Med Plus (23%) and Xantus (13%). No other MCO had more than 6% of TennCare enrollees in their organization.

- The two MCO's with the highest percentage of enrolled Medicaid eligibles compared to uninsured/uninsurable enrollees were Prudential (73%) and Vanderbilt (73%). The two MCO's with the highest percentage of uninsured/uninsurable enrollees were John Deere (42%) and PHP (43%).

Source: Bureau of TennCare, TDH, May 1999.

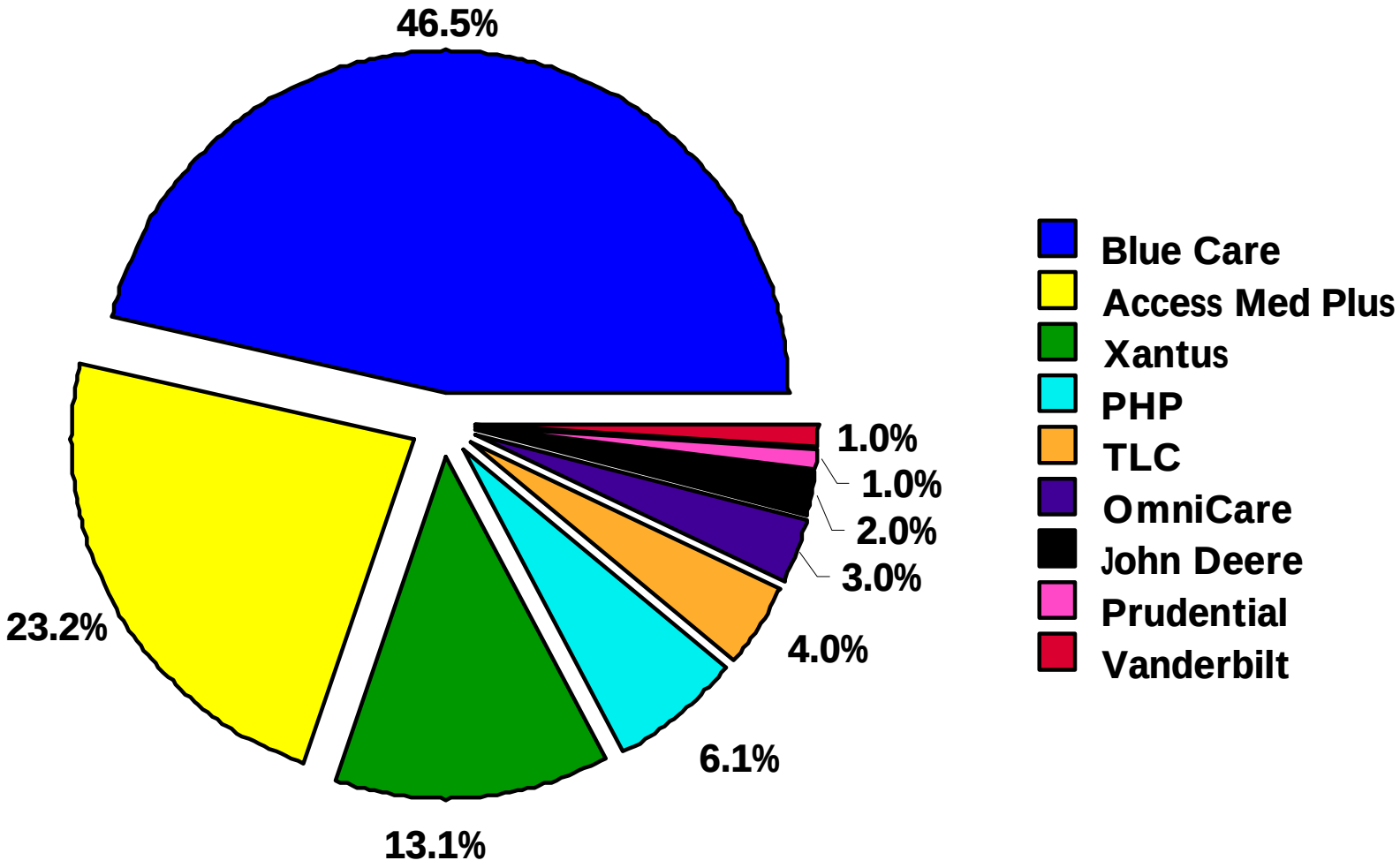
TennCare Enrollment Rates by Region, Tennessee, as of 5/99



Source: Bureau of TennCare, TDH, May 1999.

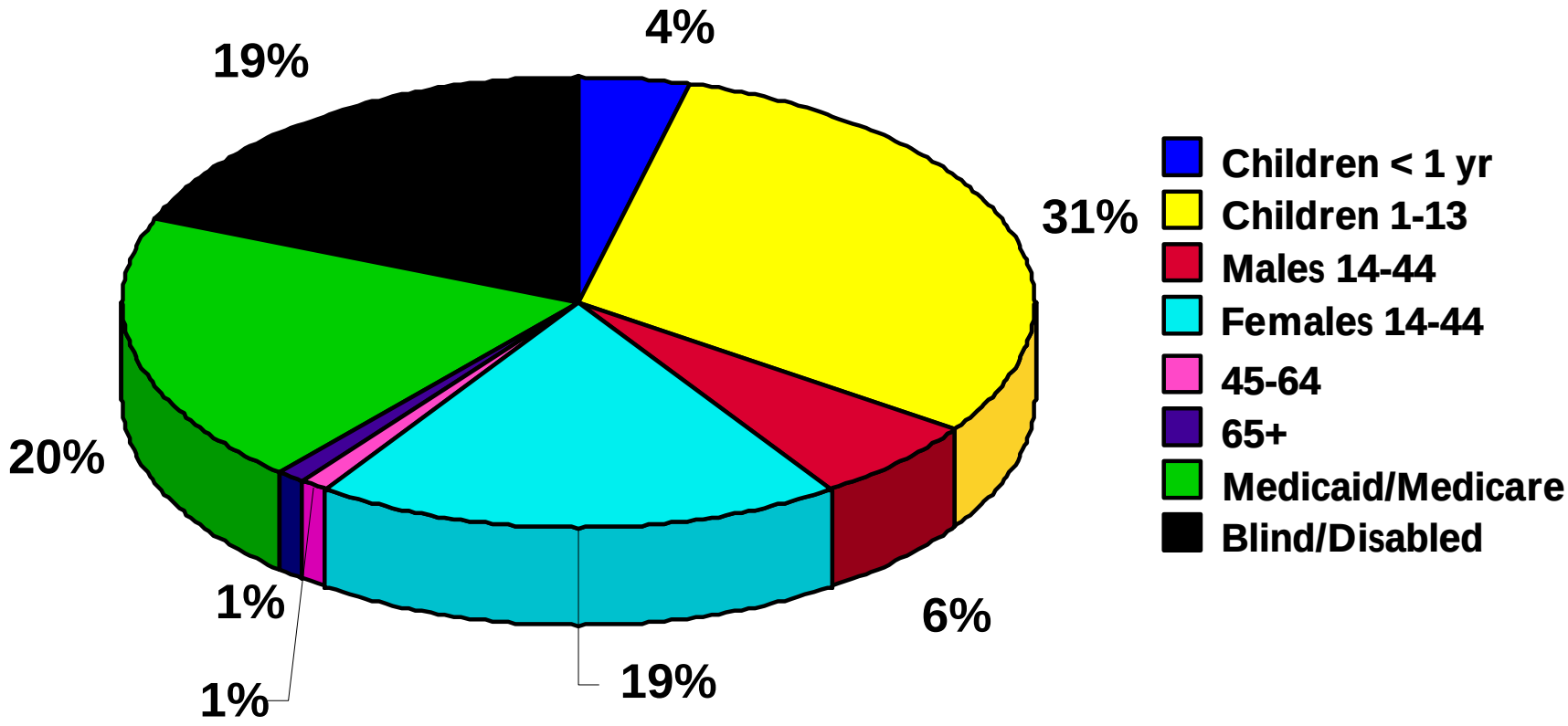
Note: The Northeast Region includes Sullivan County, and the Southwest Region includes Madison County.

Percentage Share of TennCare Eligibles among Managed Care Organizations (MCO's), Tennessee, as of 05/99



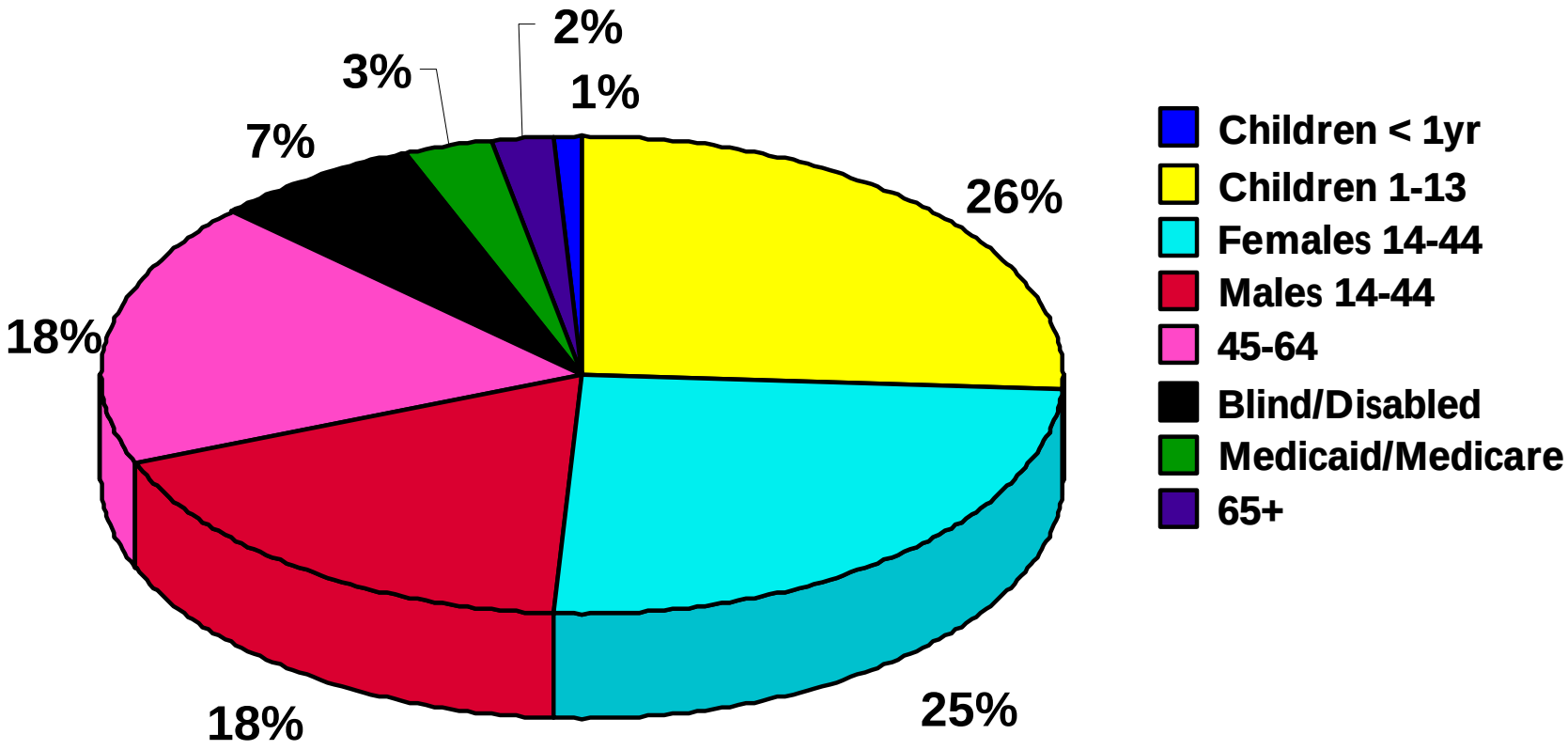
Source: Bureau of TennCare TDH, May 8, 1999

Percentage Share of TennCare Eligibles among Medicaid Enrollees, Tennessee, as of 05/99



Source: Bureau of TennCare, TDH, May 08, 1999

Percentage Share of TennCare Eligibles among Uninsured/Uninsurable Enrollees, Tennessee, as of 05/99



Source: Bureau of TennCare TDH, May 08, 1999

HEALTH FACILITIES, 1997

Hospitals[12]

Resources-Facilities

- The number of general/specialty hospitals in Tennessee totaling 133 has steadily declined overall since 1987, although the number of hospitals remained the same in 1997 as in 1996. In 1997, 132 such hospitals completed the Joint Annual Survey of Hospitals, conducted by the Tennessee Department of Health.

- Of the 132 hospitals completing the survey, 126 or 95% were general medical & surgical hospitals, and six were specialty hospitals, including three pediatric, one obstetrics and gynecology, one eye, ear, nose and throat, and one other specialty treatment hospital.

- The number of total hospital beds, both licensed (24,382) and staffed (18,590), continued to decline in 1997. In 1996, the numbers were 24,598 (licensed beds) and 19,049 (staffed beds). Seventy-six percent of licensed beds were being staffed in 1997, compared to 77% in 1996.

- The number of staffed beds per 1,000 population in 1997 was 3.5. Such numbers in 1996 and 1995 were 3.6 and 3.7, respectively.

- Of the 132 hospitals completing the survey in 1997:

  - All 132 hospitals provided cardiac treatments, including 25 hospitals (19%) providing open heart surgery.

  - All 132 hospitals provided cancer treatment, including 65 (49%) hospitals providing chemotherapy; 48 (36%) providing hematology services; and 34 (26%) providing radiotherapy.

  - All 132 hospitals had intensive care units.

  - 127 (96%) hospitals had CT/CAT scans; 87 (66%) had MRI's; and 128 (97%) had Ultrasound capabilities.

  - 124 (94%) hospitals had 24-hour staffed emergency departments.

[12]Hospitals include only short-term, non-Federal, general/specialty acute care hospitals.

- 97 (73%) hospitals provided obstetric services.

- 80 (61%) hospitals provided pediatric services.

- 42 (32%) hospitals provided hospital-based ambulance services.

- All reporting facilities were Medicaid/TennCare-Certified.

Utilization - Inpatient Care

- Inpatient days in Tennessee hospitals in 1997 totaled 3.855 million, about the same as in 1996 (3.858 million). Admissions declined slightly from 743,840 to 743,033.

- The proportion of total admissions for age-groups under 18, 18-64, and 65 and over were 10.2%, 52.2%, and 37.6%, respectively. The proportion of total inpatient days for age-groups under 18, 18-64, and 65 and over were 9.5%, 43.1%, and 47.4%, respectively.

- Utilization of short-term hospital care in Tennessee in 1997 was about the same as in the previous year. Both the average daily census and average length of stay were the same as in 1996.

  - Overall, the average length of stay in Tennessee hospitals has declined by 17% since 1991, from 6.3 days in 1991 to 6.1 in 1993, 5.3 in 1995, to 5.2 days in 1997, the same as in 1996.

  - In 1997, the average length of stay was 4.1 days for both self-pay patients and privately insured patents, 4.3 days for Medicaid/TennCare patients, and 6.3 days for Medicare patients.

- The average daily census also declined from 13,350 in 1991 to 12,442 in 1993, 10,857 in 1995, 10,570 in 1996, and 10,563 in 1997. This decline amounted to 21% over the period. However, the figure in 1997 was about the same as in 1996.

- Occupancy rates for hospital beds remained fairly stable from 1996 to 1997, from 42.6% to 43.4% for licensed beds and 55.2% to 56.8% for staffed beds. However, such numbers had fallen slightly from 1991. In 1991, the hospital occupancy rate was 50.1% for licensed beds and 60.0% for staffed beds. The occupancy rate is defined as the ratio of inpatient days to bed days open during the year expressed as a percentage.

Costs[13]

- While average length of stay and average daily census have been declining from 1991 to 1997, total operating costs for hospitals and cost per patient day have been increasing.

- From 1990 to 1997, total operating costs[14] for hospitals in Tennessee increased approximately 47%. Total operating costs rose from $4.5 billion in 1990 and $4.9 billion in 1991 to $5.8 billion in 1993 and $6.2 billion in 1996. In 1997, these costs had reached $6.6 billion. This represented a 6% increase from 1996 to 1997.

- Total net revenue also increased, from $4.76 billion to 7.03 billion from 1990 to 1997, a 48% increase.

- Net revenue per adjusted patient day also increased from $709 in 1990 and $786 in 1991 to $1,097 in 1997. This represents an overall increase of 55%.

- Tennessee hospitals are deriving a larger share of their income from outpatient services. In 1995, 30% of net patient revenue came from outpatient services compared to 34% in 1997. The gross patient charges and net patient revenue also increased by 4%-8% each year. In 1997,

  - gross patient charges were $11.96 billion;

  - contractual adjustments to gross charges were $5.46 billion;

  - net patient revenue (gross patient charges minus contractual adjustments) was $6.51 billion.

- Gross charges per adjusted patient day, net patient revenue per adjusted patient day, and net revenue per adjusted patient day all increased by 2%-6% each year. In 1997,

  - the gross charges per adjusted inpatient day were $2,002;

  - net patient revenue per adjusted inpatient day was $1,089;

  - net inpatient revenue per hospital admission was $5,426.

---

[13] In 1997, 132 hospitals completed financial data, compared to 130 hospitals in 1995.

[14] Dollar amounts have not been adjusted for inflation.

- The percent of charges provided as charity care-that for which the hospital usually does not expect payment-increased by 10% from 1996 to 1997. This percentage was 2.1% in 1996 and increased to 2.3% in 1997.

Utilization - Emergency Care

- In 1997, the statewide emergency room visit rates in short-term, non-federal hospitals were about the same in 1997 (438 visits per 100,000) as in 1996 (441 visits per 100,000).

- At the county-level, emergency room visit rates ranged from a low of 112 visits per 1,000 population in Williamson County to a high of 919 visits per 1,000 in Fentress County. Four of the six metropolitan regions (Knox, Hamilton, Madison, and Sullivan) 25 percent, indicating over 500 visits per 1,000 population. Shelby County was the lowest ranking metropolitan region in ER visit rates with 392 visits per 1,000 population.

Source: **Joint Annual Report of Hospitals**, TDH, Office of Health Statistics and Research, 1999, and under "HOSPITALS" on the HIT Web site (server.to/hit).

Nursing Homes, Tennessee, 1997

Resources - Facilities[1]

- According to the Tennessee Department of Health's Joint Annual Report of Nursing Homes, the number of licensed nursing homes in Tennessee in 1997 was 356. This represented a 3% increase (9 nursing homes) since 1996 and an 18% increase (54 nursing homes) since 1990.

- The number of nursing home beds, both licensed and staffed, showed increases in 1997 compared to 1996. The number of licensed beds was 38,786 in 1996 and 39,193 in 1997. There were 38,516 staffed beds in 1996, compared to 38,919 in 1997. From 1990 to 1997, both licensed beds and staffed beds in nursing homes increased by about 12%.

- There were 56 licensed beds per 1,000 population 65 years and older in 1997.

- Seventy-four percent of all licensed beds in nursing homes in the State were Medicaid/TennCare-certified in 1997.

- Both the number of licensed beds per 1,000 population aged 65 and over and the number of staffed beds per 1,000 population aged 65 and over in 1997 were the same as in 1996. Each year, there were 56 beds (licensed and staffed) beds per

1,000 population aged 65 and over. This was also the same number reported in 1991.

Utilization

- Based on incomplete data from the Joint Annual Report of Nursing Homes, the number of nursing home patients in 1997 was 35,736, compared to 35,532 in 1996.

- Approximately 5% of the population aged 65 and over in Tennessee were in nursing homes in 1997. This proportion has remained relatively stable since 1990.

- In 1997, 26% of the nursing home patients were males and 74% were females, the same gender distribution as in 1996.

- In 1997, 42% of nursing home patients in Tennessee were 85 years of age or older, while 36% were aged 75-84. Fourteen percent of patients were between 65 and 74 years of age, while 9% were under 65 years old. The patient age distributions were also same as in 1996.

- Nursing home admissions numbered 58,380 in 1997, an increase of 14% from 1996 (51,109), and a 98% increase from 1990 (29,488). Discharges have increased by 113% from 27,400 in 1990 to 58,386 in 1997.

- Of these 58,386 nursing home discharges in 1997, 12,431 or 21% were deaths.

- The average daily census of nursing home patients in Tennessee in 1997 was 35,199 compared to 34,809 in 1996 and 31,797 in 1990. This represents an increase of 1% over 1996 and 11% over 1997 levels. Patient census data is reported for December 31 of each year.

- Percent occupancy for Tennessee nursing home patients remained high and relative stable over the period from 1990-1997, fluctuating between 92% and 95%. Both licensed and staffed occupancy rates were about the same between 1996 and 1997. The occupancy rates in 1997 were 91% for licensed beds and 92% for staffed beds, about the same rates that were observed in 1996. In 1990, percent occupancy for both licensed and staffed beds was 94%.

- The average length of stay in nursing homes continued to decline in 1997 to 211 days compared to 246 in 1996. This was a drop of nearly 14% in one year.

- The rate of patient turnover is calculated as the number of admissions divided by the number of staffed beds. There was a slight increase in patient turnover from

1996 to 1997: from 1.3 to 1.5. From 1990 to 1997, the percentage increase in patient turnover was 76%. The patient turnover rate in 1990 was 0.85.

- Summary: From 1990 to 1997, the average daily nursing home census increased by 11% and the rate of patient turnover increased by 76%, while the average length of stay decreased by 43%. About 1 in 3 nursing home patients died in 1997.

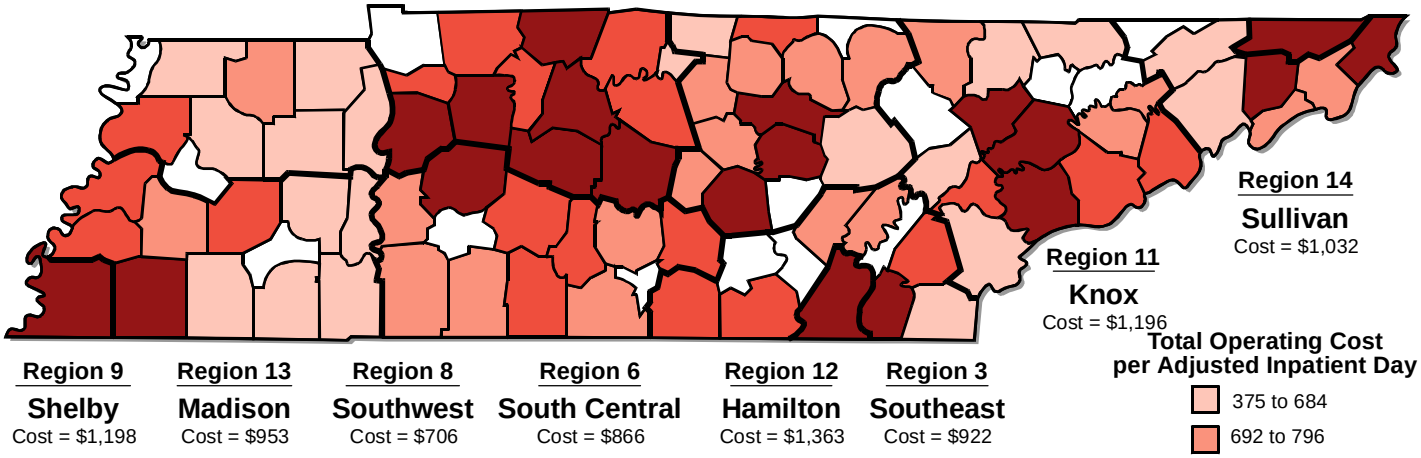
Costs

- Total operating costs for all nursing home facilities in Tennessee in 1997 were $1.39 billion, compared to $1.36 billion in 1996.

- Average gross charges per patient per day for the State were $138 in 1997, compared to $131 in 1996.

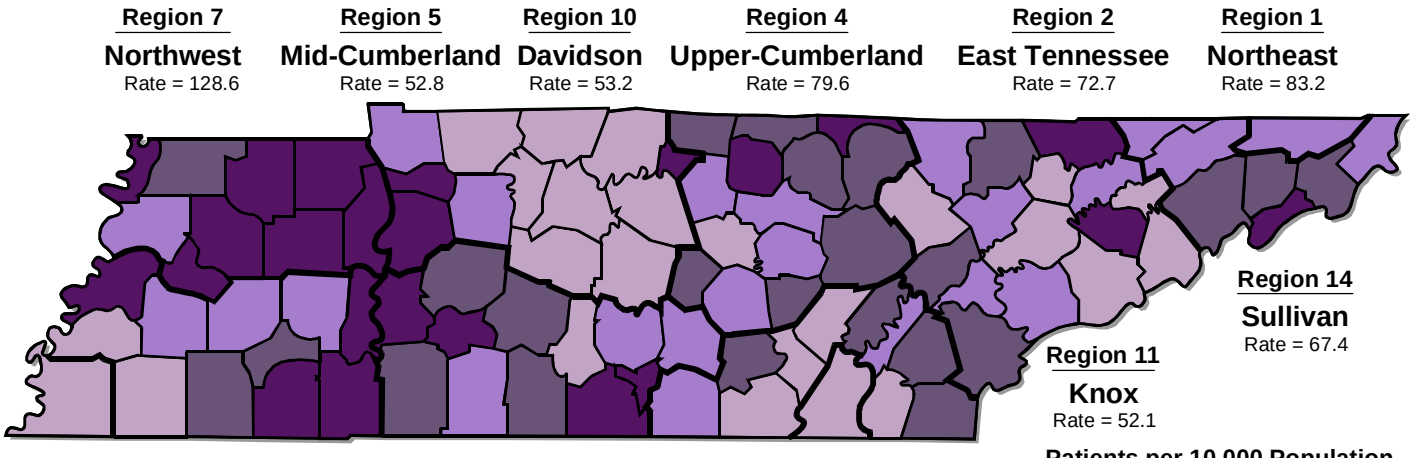
Source: **Joint Annual Report of Nursing Homes**, TDH, Office of Health Statistics and Research, 1999, and under “NURSING HOMES” on the HIT Web site (server.to/hit).

TOTAL HOSPITAL OPERATING COST PER ADJUSTED INPATIENT DAY BY COUNTY AND REGION, TENNESSEE, 1997



Source: Tennessee Department of Health and HIT (server.to/hit)

NURSING HOME PATIENTS PER 10,000 POPULATION BY COUNTY AND REGION, TENNESSEE, 1997



Source: Tennessee Department of Health and HIT (server.to/hit)

MANPOWER, TENNESSEE, 1997 and 1998

Physicians

- The number of practicing physicians in Tennessee increased from 9,862 in 1990 to 12,020 in 1997, an increase of approximately 22%. This increase was larger than Tennessee's 10% increase in population from 1990 to 1997. These changes led to an improvement in the physician-to-population ratio in Tennessee. The physician-to-population ratio decreased from 1:495 in 1990 to 1:447 in 1997.

- Of the 12,020 physicians in Tennessee in 1997, 44% were classified as primary care physicians.

- In 1998, the majority (37%) of medical doctors classified as primary care physicians were in the field of internal medicine. Another 26% of primary care physicians were family practitioners. Approximately 18% of primary care physicians specialized in pediatrics, and nearly 13% specialized in obstetrics and gynecology. Six percent of practicing primary care physicians were general practitioners. Only 0.3% of primary care physicians reported general preventive medicine as their specialty, and an even smaller percent (0.1%) reported obstetrics as their sole specialty.

- Of the primary care physicians practicing in Tennessee in 1998, nearly 77% were male. Thirty-two percent of practicing primary care physicians were aged 50 and over, while 35.5% were between 40 and 49 years of age. Another 29.5% were between 30 and 39 years of age, and 3% were 25-29 years of age.

- From 1990 to 1997, the number of Tennesseans per primary care physician decreased from 1,158 to 1,007.

- In 1997, Southwest and Northwest Tennessee had the highest percentages of primary care physicians. The county with the lowest percentage of primary care physicians was Davidson County (38%).

- In 1997, the region with the highest ratio of pediatricians per children ages 0-17 was Southwest Tennessee (1:13056). The Upper Cumberland Region had the next highest pediatrician-to-child-population ratio (1:6054). Northeast Tennessee was the nonmetropolitan region with the lowest pediatrician-to-child ratio (1:1742). The lowest pediatrician-to-child ratio statewide was in Davidson County (1:584). Among the metropolitan regions, the highest pediatrician-to-child ratio in 1997 was in Sullivan County (1:1271).

- The OB/GYN-to-female-population ratio in Tennessee decreased from 1:4402 in 1990 to 1:4174 in 1997, suggesting improved coverage.

- Of Tennessee's nonmetropolitan regions, Northeast Tennessee had the lowest OB/GYN-to-female-population ratio (1:4916) in 1997, while Southwest Tennessee had the highest (1:20977). Davidson County had the lowest OB/GYN physician-to-female population ratio (1:2130) in Tennessee.

Sources: TDH, Office of Health Statistics and Research, June 1999.
Tennessee's Health - Picture of the Present 1997, TDH, 1999.

Mid-Level Professionals, Tennessee, 1998

- The majority of mid-level professionals in 1998 were nurse practitioners (74%), followed by physician assistants (21.5%), and nurse midwives (4.4%).

- Of the mid-level professionals practicing in Tennessee, a larger percentage of nurse practitioners were practicing in the metropolitan regions of Tennessee (77%) compared to the nonmetropolitan regions (70%). By contrast, a higher percentage of physician assistants were practicing in nonmetropolitan regions (26%) compared to the metropolitan regions (18%).

- As of October 1999, 24 entire counties in Tennessee were designated as federal health professional shortage areas (with two of these being proposed for withdrawal). They represent 1 in 4 Tennessee counties. Of the mid-level professionals in these counties, 72% were nurse practitioners; 22% were physician assistants; and 5% were nurse midwives. In counties that were not designated as federal health professional shortage areas, or that were only partially designated, 74% of practicing mid-level professionals were nurse practitioners; 21.5% were physician assistants; and 4.4% were nurse midwives.

- The nonmetropolitan region with the lowest mid-level professional-to-population ratio was the Northeast Region (1:2866). Southwest Tennessee had the highest mid-level professional-to-population ratio (1:9693). Davidson County had the lowest mid-level professional-to-population ratio (1:1515) of the metropolitan regions, while Shelby County had the highest ratio among the metropolitan regions (1:3536).

- Of mid-level professionals practicing in Tennessee, 92% were white; 6% were black; and the rest were of other or unreported races.

- Of the 1,306 nurse practitioners practicing in Tennessee in 1998, 93% were female. The majority of nurse practitioners (43%) were between 40 and 49 years of age, with 22% between 40 and 44. Twenty-eight percent of nurse practitioners were between the ages of 30 and 39 years. Approximately 20% were ages 50 and older.

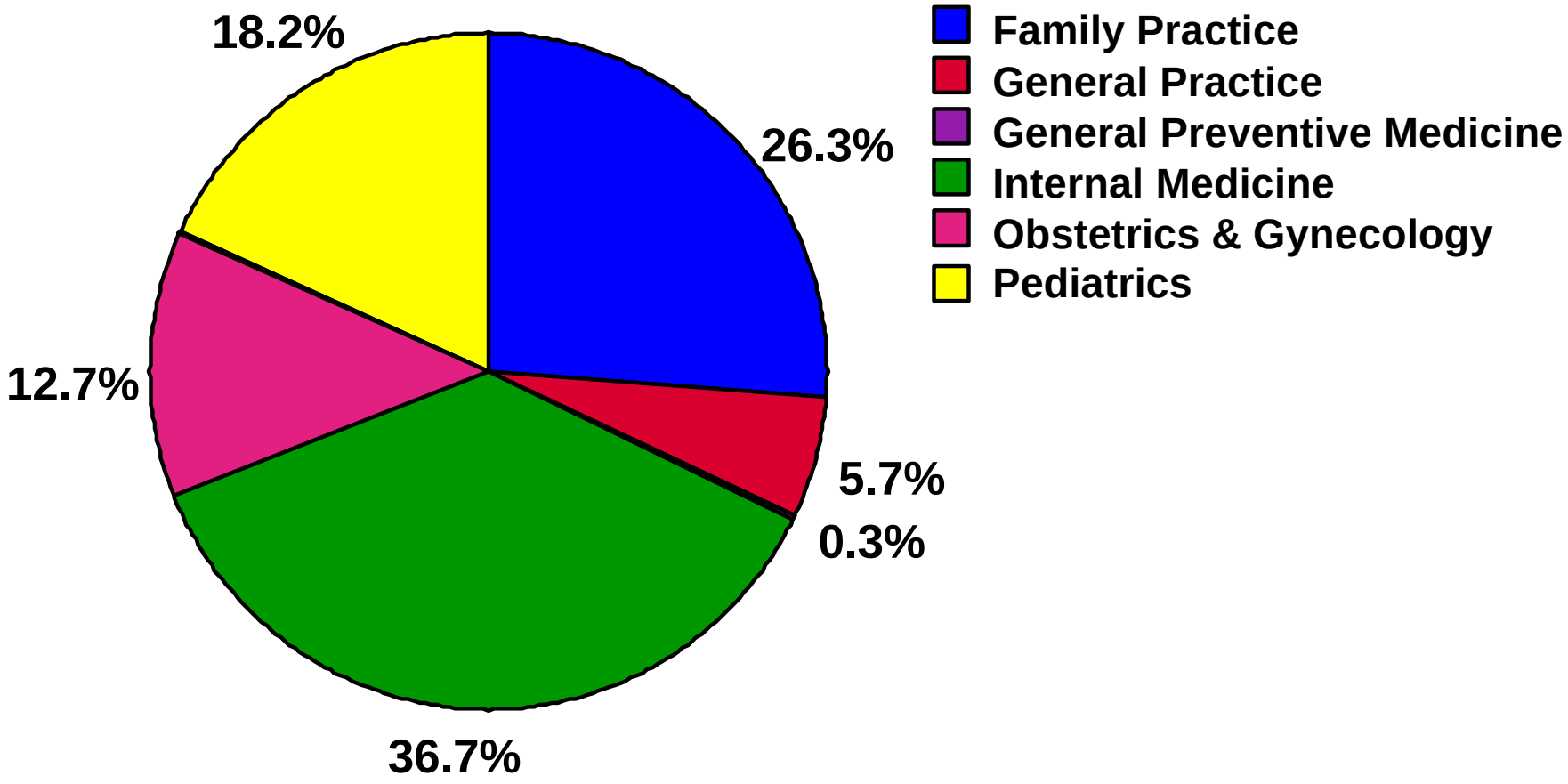
The remainder were between 25-29 years of age (8%) and 20-24 years of age (less than 1%).

- Of the 380 physician assistants practicing in Tennessee in 1998, 40% were female. Thirty-six percent of physician assistants were between the ages of 30 and 39, with 21% in the 35-39 year age group. Thirty-six percent were between the ages of 40 and 49. Twenty percent were ages 50 and over, and the rest were between 25-29 years of age (7%) and 20-24 years of age (1%).

- Of the 78 nurse midwives practicing in Tennessee in 1998, 96% were female. The majority (53%) were between 40 and 49 years of age, with 28% from 40-44 years of age. Twenty-six percent were 50 and over, and 18% were 35-39 years of age. The remainder, less than 4%, were 25-34 years of age.

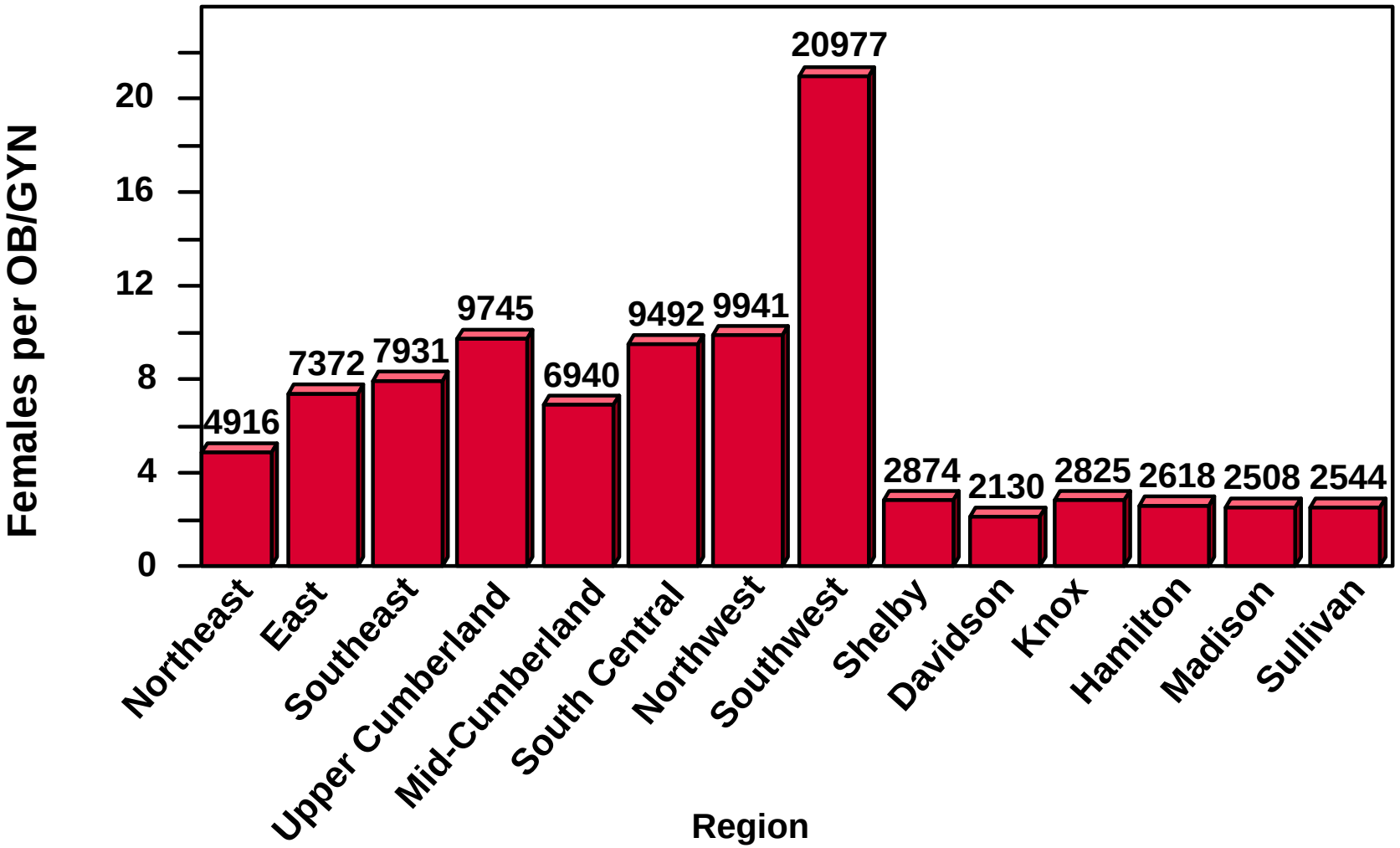
Source: TDH, Office of Health Statistics and Research, June 1999.

Primary Care Physicians Practicing in Tennessee, by Primary Care Specialties, Tennessee, 1998



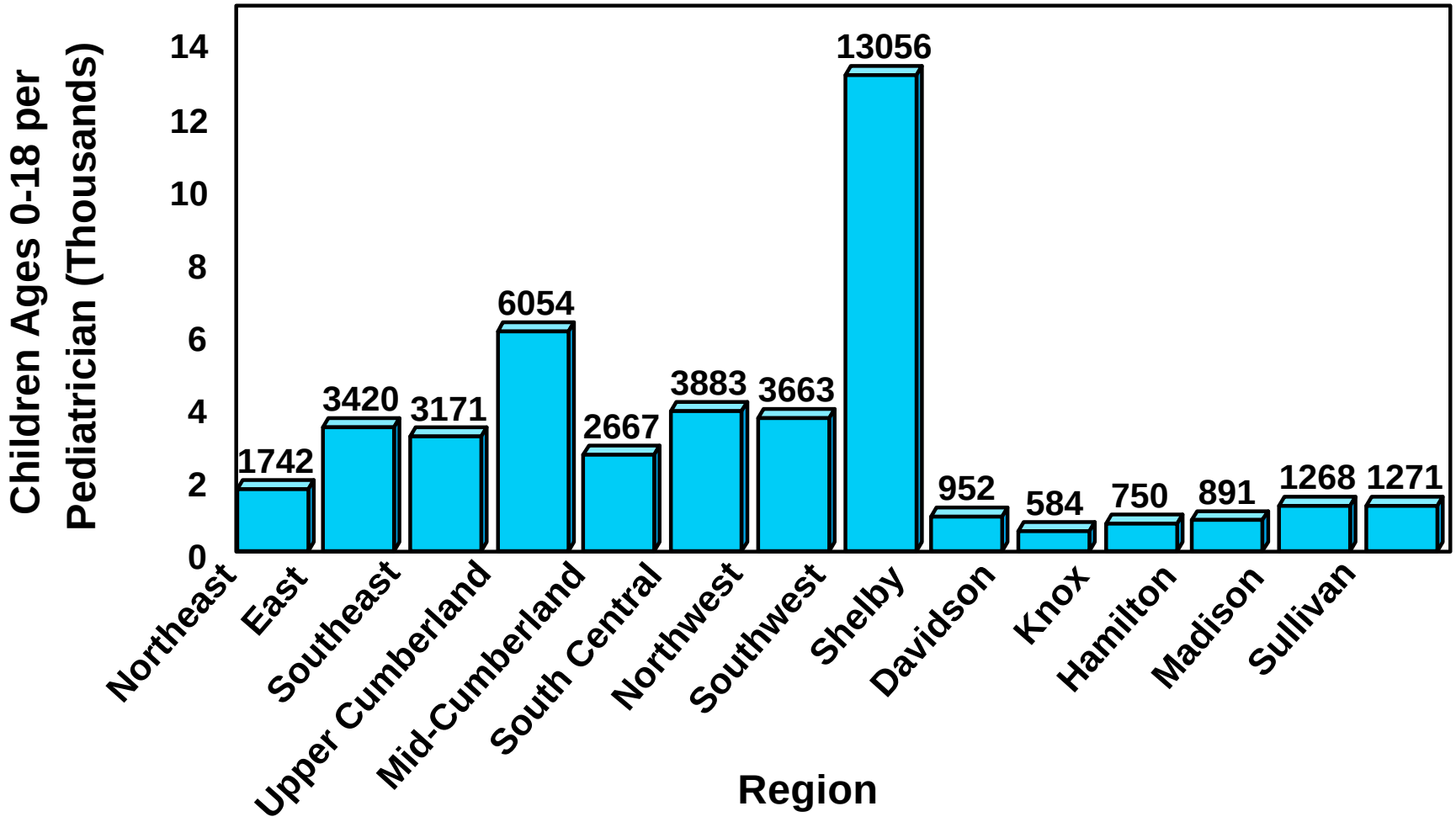
Source: Health Statistics and Information, Tennessee Department of Health, June 1999.

Number of Females per OB/GYN, By Region, Tennessee, 1997



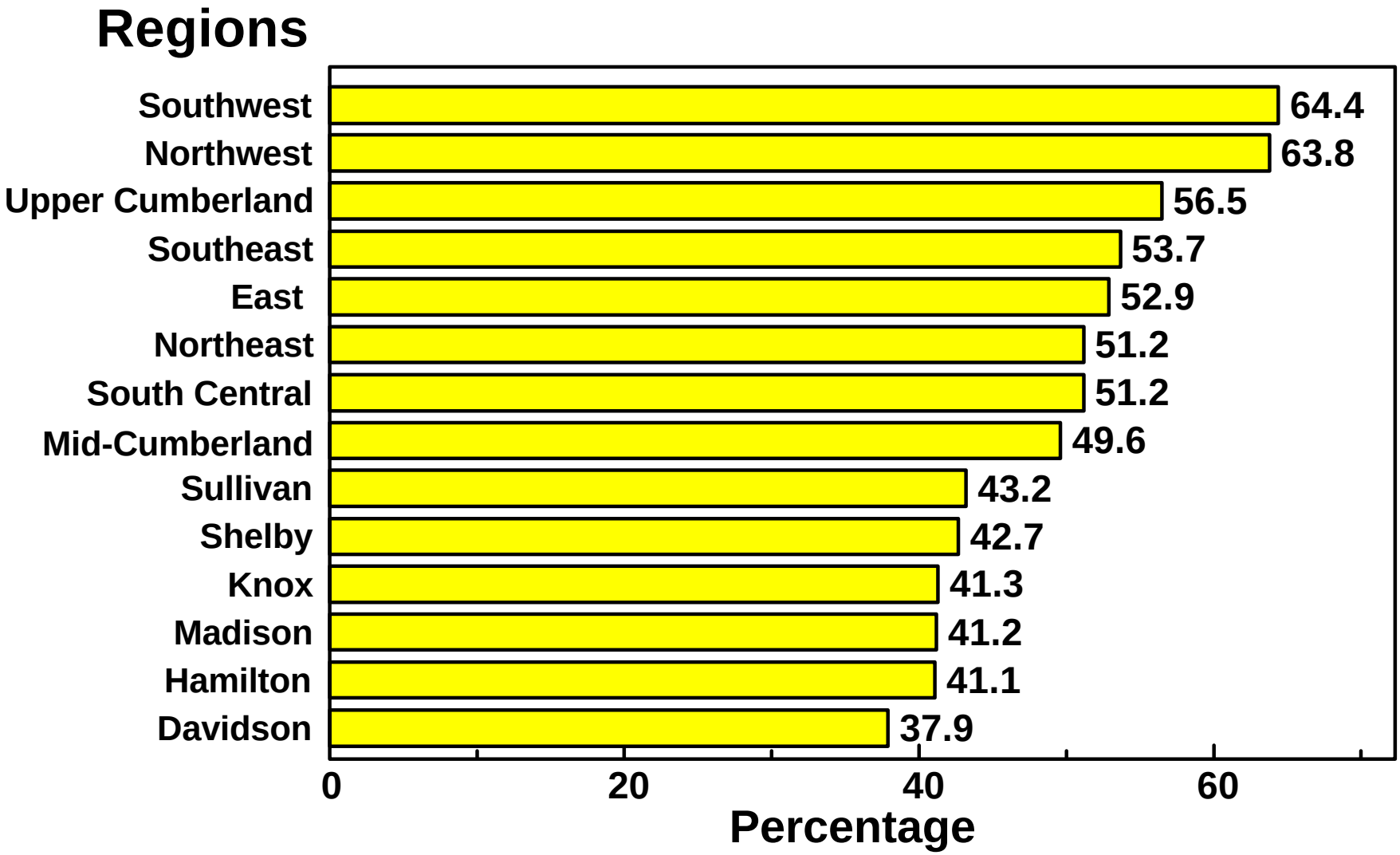
Source: Tennessee's Health - Picture of the Present 1997, Tennessee Department of Health, June 1999.

Number of Children Ages 0-17 per Pediatrician, By Region, Tennessee, 1997



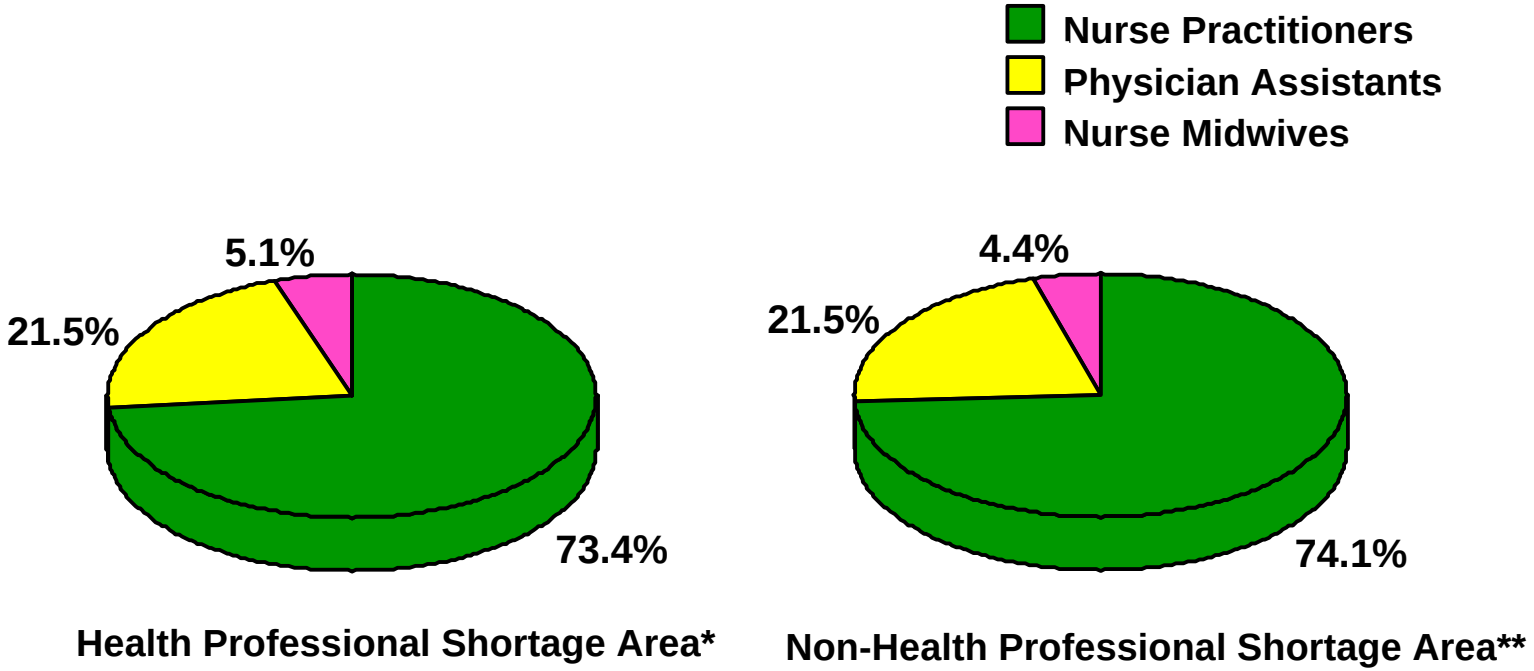
Source: Tennessee's Health - Picture of the Present 1997, Tennessee Department of Health, June 1999.

Percentage of Physicians Classified as Primary Care Physicians by Health Department Region, Tennessee, 1997



Source: Tennessee's Health - Picture of the Present, 1997, TDH, 1999.

Percent of Mid-Level Professionals by Federal Health Professional Shortage Area Designation, Tennessee, 1998

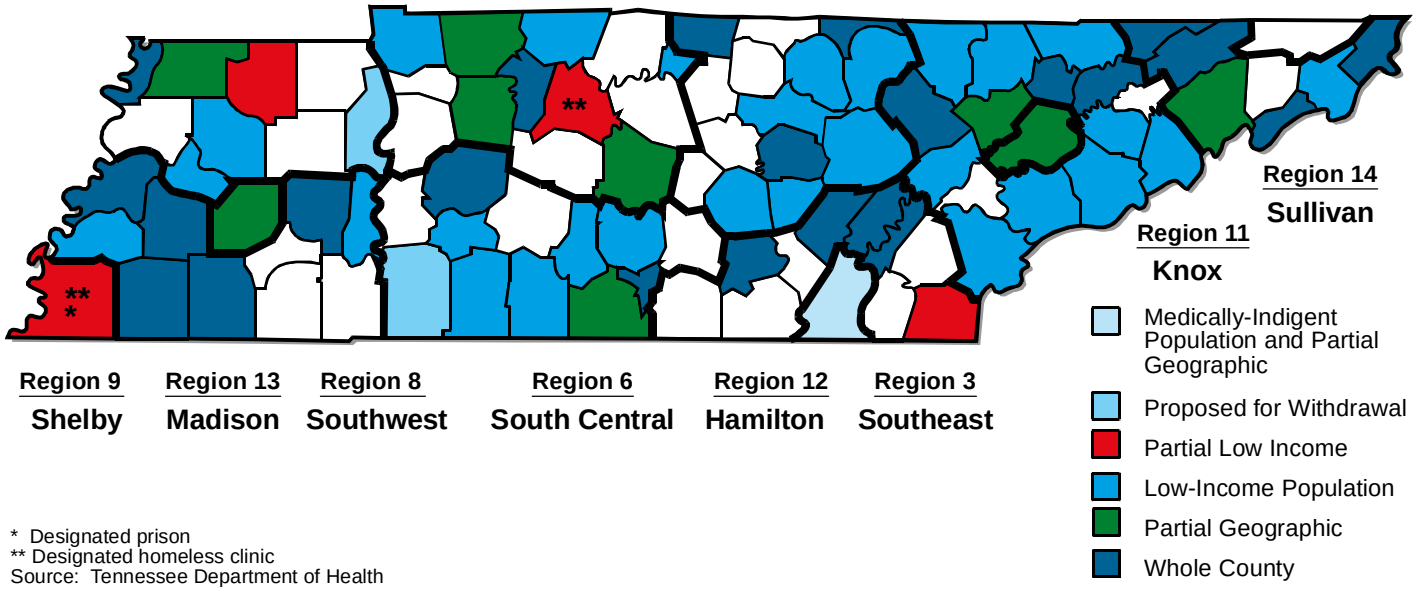


Source: Health Information and Statistics, Tennessee Department of Health, November 1999.

* Only represents entire counties that have been designated as health professional shortage areas.

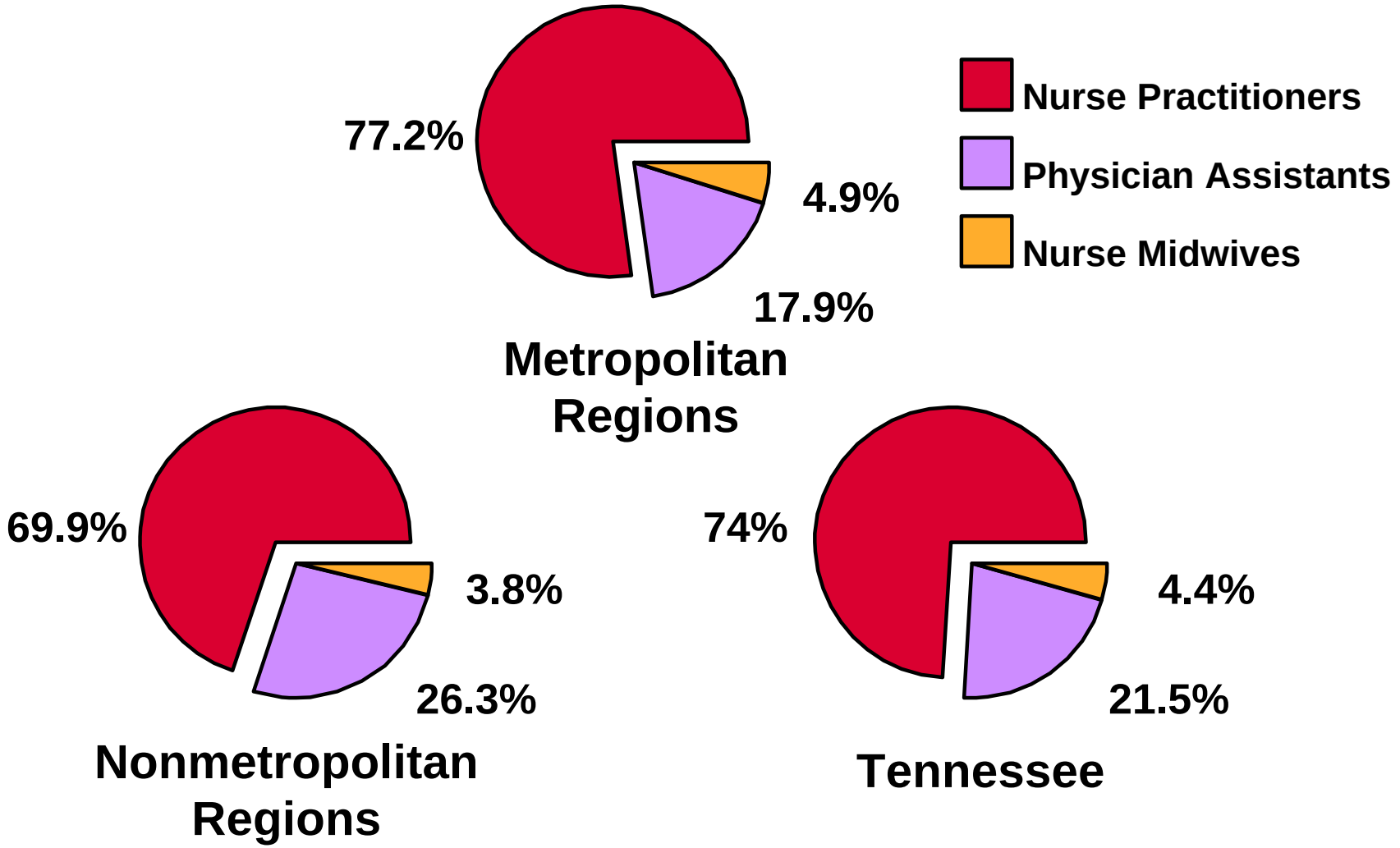
** Includes counties that are not entirely designated as health professional shortage areas, but may have some shortage areas within them.

FEDERAL HEALTH PROFESSIONAL SHORTAGE AREAS FOR PRIMARY CARE, NOVEMBER 3, 1999



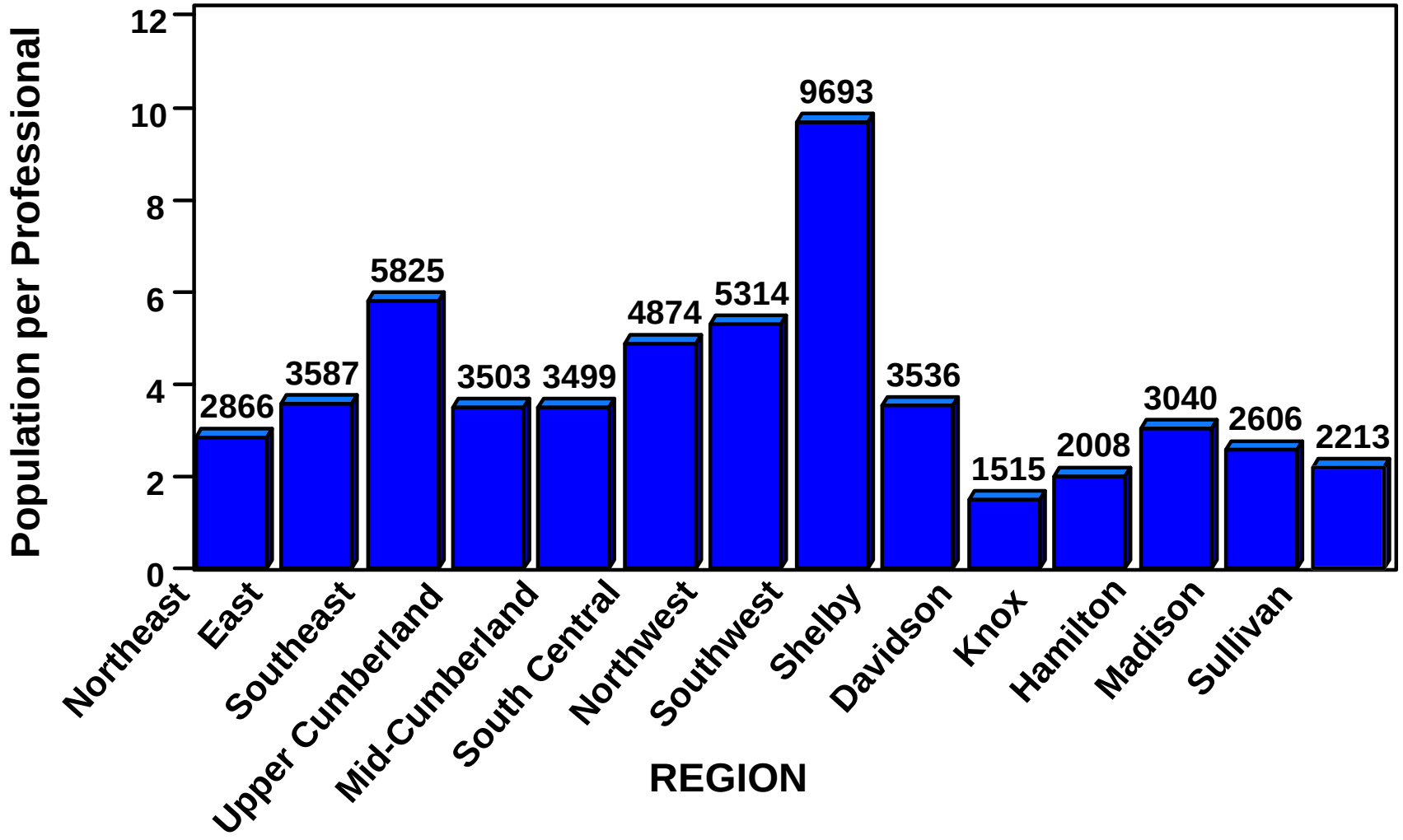
* Designated prison
** Designated homeless clinic
Source: Tennessee Department of Health

Percent of Mid-Level Health Care Practitioners by Metropolitan/Nonmetropolitan Region and Statewide, Tennessee, 1998



Source: Health Statistics and Information, Tennessee Department of Health, June 1998.

Population per Mid-Level Professional*, Ratios for Tennessee, By Region, 1998



Source: Health Statistics and Information, Tennessee Department of Health, June 1999.

* Mid-level professionals consist of nurse practitioners, physician assistants, and nurse midwives.

EMERGING HEALTH CARE INITIATIVES

The Tennessee Department of Health (TDH) is committed to a range of responses to the health care needs and problems of Tennesseans. Initiatives are underway to:

- **Address Broad System Issues for Children with Special Health Care Needs**

  In 1997, the department began an intensive review of services offered and needs of families with special needs children. Many children, formerly receiving services through the state programs for special needs children, are now covered for health care by the managed care system. The State's program is shifting to a case management/care coordination model to assure that children with special health care needs have needed services available to them and have assistance in negotiating the complex health care system.

  On a systems level, the state is forming new partnerships on behalf of special needs children through the TNKIDS Initiative and the Children's Information - Tennessee (CIT). Special wraparound services are proposed for funding consideration to expand case management, develop a teleconference/telemedicine model for case consultation with the state's teaching hospitals, and establish broader respite care services for families with special needs children. The TDH special needs program continues to develop the Parents Encouraging Parents (PEP) program as an additional support for families of special needs children.

- **Share Children's Information Through a Modern Computerized System**

  The Children's Information-Tennessee (CIT) system exemplifies the TDH initiatives to develop partnerships, share information, and implement appropriate technology. The CIT was developed as a cooperative venture of several state departments and agencies and public interest groups, including the Departments of Health (the lead agency), Children's Services, Education, Finance and Administration, Human Services, Mental Health and Mental Retardation, as well as the Commission on Children and Youth, the Center for Effective Government, TennCare, Family Voices of Tennessee and Tennessee Voices for Children.

  Representatives of these organizations formed five teams to handle business requirements, technical issues, policy issues, user training, and project oversight. The CIT is used by case managers and care coordinators of the participating state departments to enhance the planning and coordination of services to children. The system is accessible via the state intranet and the internet, and is updated regularly with standardized data feeds from each department's operating systems. Access to children's demographic and service data is protected by a strict parental consent procedure that has been implemented in the participating departments and in the

CIT. CIT conforms to all departmental security policies and employs a state-of-the-art security configuration allowing access to state-registered users only.

- **Combat Bioterrorism**

  The four largest cities in Tennessee (Chattanooga, Knoxville, Nashville, Memphis) are participating in Federal bioterrorism readiness training. The Department of Health is working closely with the Tennessee Emergency Management Agency (TEMA) to devise a plan for the public health response to bioterrorism. This response will be critical if an infectious agent is widely disseminated and the only indication of an attack is a disease outbreak.

  The Centers for Disease Control and Prevention is providing Tennessee with funding to increase the capacity of the State Laboratory to safely handle and diagnose infectious agents such as anthrax, plague and smallpox. The Department of Health will continue to seek additional funding to augment its ability to respond to any infectious disease outbreak including a bioterrorist attack.

- **Implement an Active Surveillance System for Infectious Diseases**

  The Emerging Infections Program (EIP) is the nucleus of the active surveillance system in Tennessee. The four metropolitan areas, which include Hamilton, Knox, Shelby, and Davidson counties, plus the counties surrounding Davidson (Cheatham, Dickson, Robertson, Rutherford, Sumner, and Wilson) are included in the population base for the EIP which is an estimated to be 2,694,907.

  The EIP has four major components:

  - FoodNet Program -- Pathogens to be tracked by active surveillance include *Salmonella, E. coli 0157, Campylobacter, Shigella, Listeria, Yersinia, Vibrio, Cryptosporidum, and Cyclospora*. A listeria case-control study will also be conducted to identify risk factors for disease.

  - Active Bacterial Core Surveillance Project -- Case reports based on laboratory audits and chart extractions will be completed for each case of invasive disease caused by *Streptococcus pneumoniae, Hemophilus influenzae, N. meningitidis,* and groups A & B Streptococci. At least monthly visits will be conducted at each hospital to confirm that all cases are reported and to perform chart reviews. A study to assess compliance with prenatal group B streptoccocus protocols will be conducted.

  - Unexplained Encephalitis Surveillance Project -- Enhanced surveillance with prospective identification of cases will provide a more accurate

determination of the temporal trends in infectious encephalitis and assist in development of public health prevention strategies. Sophisticated laboratory testing will be provided to patients who do not have a cause identified.

- *Campylobacter* and Guillain-Barre Syndrome (GBS) Project -- Patients diagnosed with GBS within the study area in Tennessee will have serum and stool samples collected. Patients with *C jejuni*-induced GBS will be compared to patients with *C jejuni* enteritis without GBS to identify risk factors for developing GBS after a *campylobacter* infection.

Influenza sentinel physicians provide active influenza surveillance in Tennessee from October 1 through May 15 each year. These physicians culture patients throughout the influenza season to determine types and distribution of types in Tennessee.

- **Emphasize Strategic Planning**

Tennessee State Government is moving toward strategic planning via an intra-agency and complementary model. The executive branch established the core set of goals for Tennessee and asked each agency to build a complementary strategic plan for department efforts which contribute to progress for Tennessee. The Center for Effective Government manages the activities and periodically compiles milestones and progress indicators. The Department of Health has established the following goals to move toward a “Healthy Tennessee”:

- Create a more efficient, effective and focused Department of Health.
- Offer every child a safe, healthy start.
- Create excellence in education.
- Maintain a climate for good, high paying jobs
- Protect public health and safety.

- **Develop Partnerships to the Maximum Extent Possible**

Bringing together complementary assets often yields a total greater than the sum of the parts. The Department of Health will continue to seek partnerships with agencies and organizations for projects which will benefit the health status of Tennesseans.

- **Share Information**

  To promote the dissemination of knowledge, TDH will continue to exchange health information electronically via select telecommunications initiatives across the state. TDH will promote community health information networks (CHINs) and expansion into systems which link all partners, especially at the community level.

- **Provide Health Information and Technology**

  TDH will continue to maximize the use of technology to eliminate geographic and bureaucratic barriers to communication and information exchange, will promote multipurpose networked data systems, and will develop community access systems, including the Internet, wide area network, and Geographic Information Systems (GIS).

- **Increase Health Insurance Coverage and Access for the Uninsured and Uninsurable Through TennCare**

  - In 1994, in order to reduce health care expenditures, Tennessee implemented managed care with a single point of entry.

  - An estimated 90%-95% of all Tennesseans have health insurance.

  - Services are provided through managed care organizations (MCO's) which provide inpatient and outpatient hospital care, physician services, prescription drugs, laboratory and x-ray services, medical supplies, home health care, hospice care, and ambulance transportation. Behavioral health organizations (BHO's) provide mental health and substance abuse treatment services.

  - Enrollment opened in April 1997 for uninsured children under the age of 18; this category was expanded in January 1998 to include uninsured children under the age of 19 and uninsured children who had access to insurance but who could not afford it because their family incomes were less than 200% poverty.

IMPROVEMENT STRATEGIES:
WHERE DOES TENNESSEE GO FROM HERE?

- A cornerstone of TDH's improvement strategy has been the implementation of a community diagnosis process. This involves health assessment, policy development, and quality assurance, which are founded on information-based decision-making, collaboration, and accountability.

- The mission of the community diagnosis process is to develop a community-based, community-owned, health services assessment and planning process and to implement improvement strategies.

- The process involves six stages:

    1. Initial design or start-up
    2. Data gathering
    3. Data analysis
    4. Problem identification and prioritization
    5. Intervention development
    6. A community diagnosis plan

- The community diagnosis process has provided invaluable information, on a county-by-county basis, about the prioritized needs and deficiencies affecting optimum health status for community residents. Every county in Tennessee has participated in the statewide assessment process through a local health council infrastructure. The areas of concern, or community health issues, continue to include the following:

    - Alcohol, tobacco, and other drugs
    - Teen Pregnancy
    - Cancer
    - Heart disease
    - Health promotion/wellness
    - Motor vehicle accidents
    - Violence
    - Nutrition/obesity
    - Mental health
    - Child abuse

- During the years 1999-2000, the Department of Health proposes to utilize the information generated by the community diagnosis project, along with key citizen input, to develop the "Tennessee State Health Plan." Once developed the Plan would chart the course of statewide services, partnerships, and improvement strategies.

THE TNKIDS INITIATIVE

TNKIDS is a continuing effort to better coordinate and improve services for children. The goal is to give all children the opportunity to be successful in life by offering a safe, healthy start and an excellent education. Partnership between government, families, businesses, and communities is the key to reaching the goal. Collaborating within state government are the Departments of Health, Children's Services, Human Services, Education, Mental Health Mental Retardation, as well as the Commission on Children and Youth, the Commission on National and Community Service, and the Council of Juvenile and Family Court Judges.

- TennCare, Tennessee's replacement for the Medicaid program, was expanded to provide coverage to every child and 18 year-old young adult who cannot otherwise obtain health insurance, and in 1998 that protection was extended to children of working low-income families whose parents had access to health insurance but could not afford to buy it.

- The Governor's Prevention Initiative provides grants to community-based organizations with programs proven effective in discouraging teen pregnancy, and keeping kids in school, out of trouble and off drugs.

- The Governor's Task Force on Child Care produced recommendations for increasing the availability of trustworthy child care services, and as part of the administration's Families First welfare reforms, the state has invested an additional $85 million in child care services.

- The administration has completed a six-year $1 billion increase in funding for public education, and through its ConnecTen program has made Tennessee the first state in the nation to connect all of its schools to the Internet.

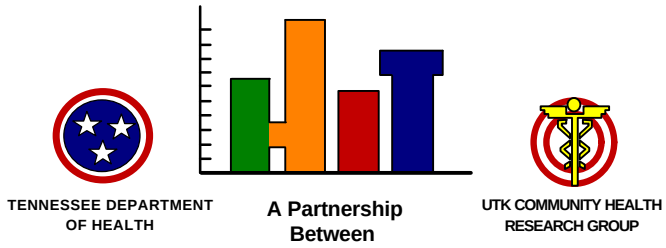
- Highlights of the first year of the program include: Governor Sundquist's summit at the Grand Ole Opry House in Nashville to formally kick-off the TNKIDS Initiative; a program whereby every child born in Tennessee in 1999 will get a free compact disc or cassette from the compilation titled "Listen, Learn and Grow: Music to Stimulate and Inspire Young Minds"; a program to provide 300,000 books so that each child in grades K-3 will receive an age-appropriate book; and a program whereby children under 3 will receive a book from the TNKIDS Initiative. Parents will be encouraged to read to the infant and share the pictures to stimulate brain and language development.

- In January of 1999, over 400 childcare providers participated in a brain development teleconference on the importance of early childhood development. Videotapes of the teleconference are being distributed across the state for those unable to attend the teleconference.

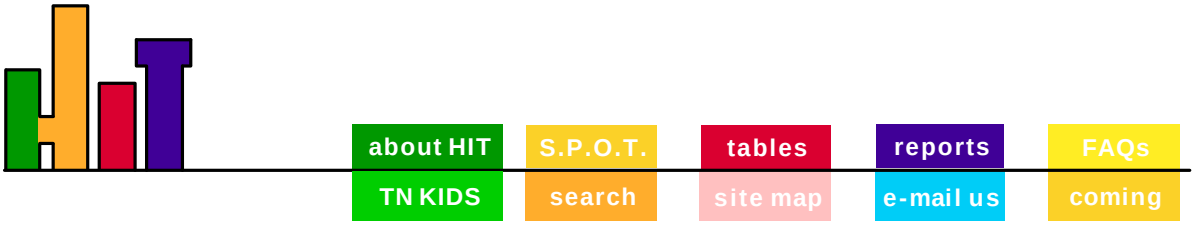
TNKIDS is how Tennessee will meet Governor Sundquist's challenge to offer every child in the State a safe, healthy start and an excellent education.

This report has been authored by Sandra L. Putnam, Valerie Brewer, Ian Rockett, Haomiao Jia, and David Steele of the Community Health Research Group, The University of Tennessee, Knoxville. Special thanks are extended to Renee Johnson and Fred Stout of the CHRG for their excellent work on the report. The assistance of Bill Wirsing, Jean Moss, Tom Spillman, George Plumlee and Ann Hogan and their colleagues at the Tennessee Department of Health, essential to producing this report, is much appreciated.

HEALTH INFORMATION TENNESSEE



Visit us on the Web at *server.to/hit*
or http*://web.utk.edu/~chrg/hit/index.htm*



ABOUT THE HEALTH INFORMATION TENNESSEE (HIT) Web SITE

The Health Information Tennessee (HIT) Web site (**server.to/hit**) is the innovative product of a partnership of the Tennessee Department of Health (TDH) and The University of Tennessee Community Health Research Group (UTK CHRG). It was designed as an interactive means of disseminating vital statistics, manpower, facilities, survey and other data collected by the TDH and reported on by the UTK CHRG in the **Tennessee Health Status Reports of 1997 and 1998.** The goal of the project has been to support the bottom-up, community-based health planning effort called the Community Diagnosis Initiative adopted by the TDH in 1995. Through the 1997 and 1998 reports and the HIT Web site, fourteen regional health councils representing 95 counties are better able to assess and prioritize community needs and plan for effective prevention and intervention. The Internet was the chosen medium for data and report dissemination to provide ready access to summary statistics, data tables, and maps at the local level.

HIT (Health Information Tennessee) was created in January 1997. HIT not only provides a variety of previously calculated health and population statistics and prepared tables, but incorporates Statistical Profiling of Tennessee or SPOT. SPOT employs a lesser used Internet feature, Common Gateway Interface (CGI), to allow the user the opportunity to query various Tennessee health data bases in such a way that personalized plots, maps, charts and tables can be produced upon demand, interactively. The requested information is calculated at the moment the query is submitted by a self-modifying SAS program residing on a server computer at The University of Tennessee. In this way data can be analyzed and presented in an infinitely flexible manner; statewide and substate comparisons can be made; data can be standardized and updated constantly; data quality and accuracy can be assured; and access can be widespread and multifocal.

Data from two random sample surveys conducted in Tennessee by the Community Health Research Group for the Bureau of Alcohol and Drug Abuse Services are available for use on HIT/SPOT. These include the Tennessee Adult Alcohol, Tobacco and Other Drug (ATOD) Needs Assessment Survey of 1993 (n=8000) and the Tennessee High School ATOD Survey of 1995 and 1997 (n=102,000). Survey and other data sets, including mortality, natality, population, hospital, nursing home and school data sets, can be used to triangulate on community problems. Questions can be answered using comparisons of excess death rates by cause, excess risk factors for those death rates from survey data, and resource availability and accessibility data from joint annual surveys of facilities and manpower surveys. Examples of such questions that can be answered using SPOT include what are the leading causes of death among particular gender, racial and ethnic, age, socioeconomic status and geographic groups, or how do lung cancer death rates in a county or region seem to be related to adult and youth smoking levels and patterns in that county or region and what hospital-based oncology services are available for treatment.

The burden of illness and injury mortality can be displayed as data listings and tables, county rankings, pie or bar charts, plots, or layered maps at county, regional and statewide levels. Work is underway to improve the spatial resolution of the data to permit this at the census tract level as well. Interactive GIS capabilities on the Web site on HIT MAPMAKER allow for customized mapping of related exposures by overlaying census data with vital statistics, as well as overlays of cities and towns, hospitals, nursing homes, and alcohol and drug treatment facilities, and other locations of services and facilities. Data can be analyzed by age, gender, race, education, poverty status, Hispanic origin, and residence to yield comprehensive profiles of health exposures, risk and need for services in Tennessee using HIT and SPOT.

The mapping ability in HIT MAPMAKER greatly expands the utility of SPOT for community-based health needs assessment. The GIS component of HIT enables the user to customize maps at state, regional, and county levels. Basic atlas functions are provided interactively, along with bivariate overlay mapping using census and mortality data. The user interface is friendly and straightforward. Site users are able to create, view, alter, download, and print maps. Pan, zoom and identify functions are now available. Soon, data from the SPOT component will be able to be transferred to the mapping program to produce age-gender-race and region-specific one and two variable maps of mortality, population, birth and census data, mapped in relation to locations of hospitals, nursing homes, and other health care facilities.

Another addition to HIT is Summary County Results Explorer (SCORE). SCORE uses aggregate, rather than case level, data to provide customized outputs similar to SPOT. The prototype of SCORE uses Tennessee KIDS COUNT data by report year and supports the Tennessee Governor's Initiative on Children and Youth, TNKIDS. SCORE will be used for displaying Census data and summary data from a range of data sets. It will also provide GIS functions through HIT MAPMAKER.

For more information, please contact The University of Tennessee, Community Health Research Group, Suite 309, Conference Center Building, Knoxville, Tennessee 37996-4155, phone: 423-974-4511 or e-mail: chrg@utkux.utk.edu or sputnam1@utk.edu.

DATA COMPENDIUM FOR
TENNESSEE HEALTH STATUS REPORT, 1999

Collection of the majority of the raw data cited here was sponsored and performed by the TDH. The analysis and reporting of the data for this preview was conducted by the UTK CHRG. In addition to data analysis and reporting, the UTK CHRG conducted four of the surveys.

The Data Compendium is alphabetized by name of the study/data set.

- **Name of the Study/Data Set: The Tennessee Hospital Emergency Room Drug Study**
  Sponsor: Bureau of Alcohol and Drug Abuse Services, Tennessee Department of Health
  Source: Community Health Research Group, The University of Tennessee, Knoxville
  Description: This study represented landmark research conducted on a statewide probability sample of emergency room (ER) patients, 18 years and older. This unique population-based study was designed to generate estimates of the prevalence of alcohol and/or other drug (AOD) use, dependence, and need for treatment among this high-risk group. Approximately 1,600 ER patients were personally interviewed and asked a series of questions to ascertain sociodemographic factors and AOD use. By utilizing scientifically valid sampling and weighting techniques, data was generated that provided maximum comparability to the Tennessee population at large. Moreover, self-reported AOD use and dependence data (also using DSM-IV clinical criteria) was combined with results of saliva testing and urinalysis to confirm current AOD use.

- **Name of the Study/Data Set: Crime State Rankings 1999**
  Source: Morgan Quitno Press, Lawrence, KS
  Description: *Crime State Rankings 1999* is a reference book of crime-related data by state. This book presents over 500 tables of state crime data and state comparisons in the categories of arrests, corrections, drugs and alcohol, finance, juveniles, law enforcement, offenses, and urban/rural crimes.

- **Name of the Study/Data Set: Health Care State Rankings 1999**
  Source: Morgan Quitno Press, Lawrence, KS
  Description: *Health Care Rankings 1999* is a reference book of health care data by state. Over 500 tables in this book provide state health care data and compare states in the areas of births and reproductive health, deaths, disease, insurance and finance, health care providers, facilities, and physical fitness.

- **Name of the Study/Data Set: Tennessee's Health - Picture of the Present 1997**
  Sponsor: Tennessee Department of Health
  Source: Office of Health Statistics and Information, Policy Planning and Assurance
  Description: This annual report, published in 1999, contains statistical data for Tennessee for the 1997 calendar year. This report contains tabulations for each county within Tennessee, as well as for the entire state. These tabulations include the following types of data: population estimates, pregnancies, mortality, manpower, facilities, and morbidity. Time-series data is also included for the state and each county.

- **Name of the Study/Data Set: Adult Behavioral Risk Factor Surveillance System, 1997**
  Sponsor: Tennessee Department of Health
  Source: Centers for Disease Control and Prevention
  Description: This data set is based on a survey administered to a random sample of the general population of adults, ages 18 and over, living in households in all 50 states. It provides general information about health risks, behaviors, and attitudes of those sampled. The survey is designed to provide uniform data to identify chronic disease risks and guide health promotion and disease prevention programs. Over 2,900 interviews were conducted by telephone with respondents who were randomly selected from adult members of households in Tennessee.

- **Name of the Study/Data Set: Birth Data**
  Sponsor: Tennessee Department of Health
  Source: Tennessee Department of Health , Certificates of Live Birth
  Description: This data set includes information on all live births occurring in Tennessee as well as births occurring out-of-state to Tennessee residents. Basic demographic characteristics are available for the infant, as well as for the mother and father.

- **Name of the Study/Data Set: Joint Annual Report of Hospital Data**
  Sponsor: Tennessee Department of Health
  Source: Tennessee Department of Health, Health Statistics and Information
  Description: Hospital-based data by Health Service Area (HSA), county, and the state are available covering services utilization, discharges, patient origin, inpatient newborn and maternal services, and selected financial data.

- **Name of the Study/Data Set: Joint Annual Report of Nursing Homes Data**
  Sponsor: Tennessee Department of Health
  Source: Tennessee Department of Health, Health Statistics and Information
  Description: Nursing home-based data by Health Service Area, county, and state are available on licensure, accreditation, facilities and services, beds, personnel, utilization, skilled care procedures and selected financial data.

- **Name of the Study/Data Set: Mortality Data**
  Sponsor: Tennessee Department of Health
  Source: Tennessee Department of Health , Certificates of Death
  Description: This data set includes information on all deaths occurring in Tennessee as well as deaths occurring out-of-state to Tennessee residents for the years 1990-1997. Basic demographic characteristics are available for the decedent along with detailed information pertaining to the cause of death. Data linking infant deaths (under 1 year of age) with their corresponding Tennessee birth record are available.

- **Name of the Study/Data Set: Population Data, 1990 - 2000**
  Sponsor: Tennessee Department of Health
  Source: Tennessee Department of Health
  Description: Population estimates are available for the State of Tennessee for the years 1990 - 2000, by race, gender, age, and county. [Note: the 1990 data are the actual Census counts for that year.] Data are available by single years of age through age 79. Ages 80-84 are grouped together into one category and ages 85 and over are represented by 85+. Race categories are white, black, and other.

- **Name of the Study/Data Set: Tennessee DUF/SANTA Arrestee Study, 1996**
  Sponsor: Bureau of Alcohol and Drug Abuse Services, Tennessee Department of Health and the Federal Center for Substance Abuse Treatment
  Source: Community Health Research Group, The University of Tennessee, Knoxville
  Description: This study examines the alcohol and other drug (AOD) history, use, abuse, and dependence, and receipt of and need for treatment in a random sample of all arrestees, adult and juvenile, male and female, arrested for any offense in three urban areas (Knox, Davidson, and Shelby counties) and two rural areas (Jefferson and Putnam counties) in Tennessee in late 1995 and early 1996. Within each study facility in these areas, recent arrestees were randomly selected from the facility's intake log sheet. Eligible arrestees had to be arrested during the commission of a crime and brought into the facility no more than 48 hours before the start of an interviewer's shift. A total of 1,141 adults and 426 juvenile arrestees were interviewed.

- **Name of the Study/Data Set: Youth Risk Behavior Surveillance System, 1997**
  Sponsor: Tennessee Department of Health and Tennessee Department of Education
  Source: Centers for Disease Control and Prevention
  Description: The Youth Risk Behavior Surveillance System includes both a national school-based survey conducted by CDC as well as state and local school-based surveys conducted by state and local education agencies. The system monitors six categories of priority health-risk behaviors among youth and young adults: behaviors that contribute to unintentional and intentional injuries; tobacco use; alcohol and other drug use; sexual behaviors that contribute to unintended pregnancy and STD's, including HIV infection; unhealthy dietary behaviors; and physical inactivity.

- The YRBSS was developed by the Centers for Disease Control and Prevention (CDC) to monitor priority health risk behaviors that contribute to leading causes of illness, injury and death and social problems among youth in the US. The 1997 YRBSS was conducted by the Tennessee Department of Education on 1418 students in 36 public schools in the Spring of 1997. The overall response rate was 55%, comprised of a 67% response rate for schools and 82% among students. No weighting of data was conducted due to an overall low response rate, and use of these data to generalize to other high school students in Tennessee is problematic and discouraged. However, these biennial surveys are the only source of time trend data on high school students available in the State. The 1995 YRBSS sampled 36 public schools and 3197 students for an overall response rate of 46% -- a response rate of 56% for schools and 83% for students. Again the low response rate precluded weighting of the data, and the same reservations concerning the ability to generalize to all Tennessee students exist. The 1993 YRBSS, which was conducted cooperatively by the Tennessee Departments of Health and Education, was administered to 3234 students in 35 public high schools in Tennessee during the Spring of 1993. In this survey, data were weighted and results are generalizable to the state as a whole. The results for 1993 can therefore be used to infer to the population of Tennessee high school students concerning high risk and priority health behaviors.